In This Issue

Promoting rest using a quiet time innovation in an adult neuroscience step down unit
By Tara Bergner, RN, BN, MHS, CNN(c) ................................................................................................................................. 5

Primary malignant brain tumours, psychosocial distress and the intimate partner experience: What do we know?
By Dr. Brenda Sabo RN, PhD ..................................................................................................................................................... 9

Development of clinical practice guidelines for urinary continence care of adult stroke survivors in acute and rehabilitation settings
By Andrea R. Fisher, RN, MSN, MSc, CNN(C), Infection Control Professional ................................................................. 16

Clustered stroke patients on a general medical unit:
What nursing skills and knowledge contribute to optimal patient outcomes?
By Brenda Clayton, Athabasca University ............................................................................................................................ 32

Retrospective analysis of phone queries to an epilepsy clinic hotline
By Anny Laforme, RN, BNI, Suzie Jubinville, RN, Micheline Gravel, RN, BScN,
Patrick Cossette, MD, PhD, FRCPC, and Dang K. Nguyen, MD, PhD, FRCPC ........................................................................ 41
Websites of interest

Canadian Association of Neuroscience Nurses and
Canadian Journal of Neuroscience Nursing website: www.cann.ca
Check this site often for updates on information.
Reports will be on the website.

Canadian Nurses Association: www.cna-nurses.com

Canadian Congress of Neurological Society: www.ccns.org
Please check out the web page to learn more about the society to which we belong. CANN is an affiliate of this society.

Canadian Journal of Neurological Sciences: www.CJNS.org

World Federation of Neuroscience Nurses: www.WFNN.org
All CANN members are automatically members of WFNN.

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Mission statement
The Canadian Association of Neuroscience Nurses (CANN) sets standards of practice and promotes continuing professional education and research. Members collaborate with individuals, families, interdisciplinary teams and communities to prevent illness and to improve health outcomes for people with, or at risk for, neurological disorders.

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Editorial

Well, it is time for me to come out from behind the scenes and thank Dr. Theresa Green for welcoming me to the editorial department of the Canadian Journal of Neuroscience Nursing. It is a pleasure to be involved with an organization that is powered by sheer will and determination. As a previously somewhat passive participant in CANN, I cannot believe the amount of volunteer energy that is required, supplied and expended in producing an annual conference and a specialty nursing journal. Since joining Theresa, I have had the opportunity to be a part of the editorial process. We have reviewed, edited, accepted and rejected quite a few papers in the past year. I can assure you that a lot of effort goes into producing a product that readers should find interesting, applicable and of a high scholarly quality. Although the standards might be uncompromising, the editorial process remains supportive of authors willing to submit their papers for review. We are grateful to the volunteer peer reviewers who take so much time to carefully read each submission and make thoughtful comments. We know there are many gems out there yet to be polished.

This journal and our organization is what we make it. We need your submissions of original work to continue to fill our virtual pages. Be brave, seek out help from others, put yourself out there, and share what you know. There is a huge amount of knowledge locked up in neuroscience nurses across this country—share it! We will continue to support your efforts.

Best regards and best wishes for the holiday season.

Corbin Lippert, RN, MN, NP
London Health Sciences Centre, London, ON
Assistant Editor

Éditorial

On dirait qu’il est temps pour moi de sortir de l’ombre et de remercier Mme Green de m’avoir accueilli au sein de la rédaction du Journal canadien des infirmières et infirmiers en neurosciences. C’est un plaisir de m’impliquer dans un organisme qui repose sur une volonté et une détermination absolues. Parce que j’étais autrefois un participant quelque peu passif de l’ACIIN, je suis sidéré par la quantité d’énergie que doivent déployer les bénévoles pour organiser une conférence annuelle et publier un journal spécialisé. Depuis que j’ai rejoint Theresa, j’ai eu l’occasion de prendre part au processus éditorial. Au cours de l’année, nous avons revu, corrigé, accepté et rejeté bon nombre de documents. Je peux vous garantir que la conception d’un produit que les lecteurs trouveront intéressant, applicable et d’une grande qualité académique est le fruit de maints efforts. Malgré des normes insurmontables, le processus éditorial continue à soutenir les auteurs et auteures prêts à soumettre leurs articles pour révision. Nous sommes reconnaissants du travail effectué par nos pairs évaluateurs bénévoles, du temps qu’ils passent à lire attentivement chaque article et de leurs observations judicieuses. Nous savons que de nombreuses perles rares attendent encore leur heure.

Ce journal et cet organisme ne sont que ce que nous en faisons. Il est indispensable que vous soumettiez vos travaux originaux si nous voulons continuer à remplir nos pages virtuelles. Soyez courageux, sollicitez l’aide des autres, faites-vous connaître et partagez ce que vous savez. Les infirmiers et infirmières en neurosciences de ce pays sont les porteurs de nombreuses connaissances qui ne demandent qu’à être partagées. Alors, allez-y! Nous continuerons à appuyer vos efforts. Mes meilleurs vœux à tous pour cette fin d’année.

Corbin Lippert, RN, MN, NP
London Health Sciences Centre, London, ON
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CLINICAL CORNER

Promoting rest using a quiet time innovation in an adult neuroscience step down unit

By Tara Bergner, RN, BN, MHS, CNN(c)

Abstract
Sleep and rest are fundamental for the restoration of energy needed to recuperate from illness, trauma and surgery. At present hospitals are too noisy to promote rest for patients. A literature search produced research that described how quiet time interventions addressing noise levels have met with positive patient and staff satisfaction, as well as creating a more peaceful and healing environment. In this paper, a description of the importance of quiet time and how a small but feasible innovation was carried out in an adult neuroscience step down unit in a large tertiary health care facility in Canada is provided. Anecdotal evidence from patients, families, and staff suggests that quiet time may have positive effects for patients, their families, and the adult neuroscience step down unit staff. Future research examining the effect of quiet time on patient, family and staff satisfaction and patient healing is necessary.

Keywords: noise, hospital, quiet time, rest, patient satisfaction

I know that I will feel better when I go home, where it is quiet, because there I can finally get some rest.

C.F., personal communication, Patient in Adult Neuroscience Step Down Unit, Health Sciences Centre (HSC), Winnipeg, Manitoba

Sleep and rest are fundamental for the restoration of energy that is needed to recuperate from illness, trauma and surgery (Fontana & Pittiglio, 2010). However, in the present state, hospitals are too noisy to facilitate this for patients (Mazer, 2006). On average, an adult requires six to eight hours of uninterrupted sleep each night to be able to function. In a hospital, a patient might only receive eight minutes of continuous sleep (Lower, Bonsack, & Guion, 2003). Adequate sleep has a positive influence on blood pressure, the pain experience and emotional well-being (Gardner, Collins, Osborne, Henderson, & Eastwood, 2009). Conversely, sleep deprivation has been shown to cause many adverse physiological changes including immune system depression, respiratory changes, vasocostriction of peripheral blood vessels, gastrointestinal motility changes, increased muscular tension and increased heart rate and blood pressure (Dennis, Lee, Knowles Woodard, Szalaj, & Walker, 2010). As well, psychological changes including depression, delirium, anxiety and confusion may affect recovery (Lower et al., 2003).

Since the time of Florence Nightingale, nurses have known a quiet, restful environment is required for healing to occur (Murphy, Bernardo, & Dalton, 2013). However, since the 1960s this has been increasingly difficult to provide because of the amount of noise within hospital units, especially with the constant evolution of technology and its incorporation into the care of patients (Xie, Kang, & Mills, 2009). In this article, we describe development, implementation and anecdotal feedback related to a quiet time innovation implemented on an adult neuroscience step down unit (ANSDU), undertaken to address noise levels and the difficulty caused in relation to patient rest.

Background
In 1999, The World Health Organization (WHO) recommended that the average noise level in a patient’s room should not exceed 35 dB (Berglund & Lindvall, 1999). Researchers have found levels of noise in hospitals range from 50 to more than 100 dB (Darbyshire & Young, 2013; Konkani & Oakley, 2012; Murphy et al., 2013; Ryherd, Waye, & Ljungkvist, 2008; Xie et al., 2009). Comparatively, the noise level associated with normal living, talking or having a radio play in the background is 50 dB, while standing beside a running motorcycle, two-stroke chainsaw, or pneumatic drill measures 100 dB (Darbyshire & Young, 2013; Konkani & Oakley, 2012; Murphy et al., 2013; Ryherd, Waye, & Ljungkvist, 2008; Xie et al., 2009).
In the neuroscience patient population, the constant and excessive noise that decreases sleep and rest has potentially devastating physiological effects. Noise increases a patient's intracranial pressure which, if unaddressed, can lead to the patient's death (Hickey, 2009; Tymianski, Sarro, & Green, 2012). A fundamental nursing measure implemented when a patient exhibits signs and symptoms of increased intracranial pressure is to decrease stimulation and noise by caring for the patient in a quiet, darkened room, thus lowering the patient's intracranial pressure (Woodrow, 2000).

**Synopsis of the literature related to noise in hospitals**

Noise in hospitals has been reported as three times the recommended level (Berglund & Lindvall, 1999; Darbyshire & Young, 2013; Konkani & Oakley, 2012; Murphy et al., 2013; Ryherd, Waye, & Ljungkvist, 2008; Xie et al., 2009). We conducted a review of the literature to determine what research disclosed about the impact of noise in hospitals, as well as approaches to mitigate these noise levels.

A study related to noise levels and perceived work environment in a neurological intensive care unit was completed in 2008 in Sweden (Ryherd et al., 2008). This research provided a thorough description of noise levels in intensive care units and how that noise could be disruptive to the occupants, but did not provide any interventions to mitigate it (Ryherd et al., 2008). Research from Australia described how noise was a barrier to sleep for patients in an acute care hospital, and how a scheduled quiet time intervention met with positive patient, visitor and health professional satisfaction (Gardner et al., 2009). This research demonstrated quiet time was a positive intervention with a direct correlation to the noise level and the patient sleep/wake pattern (Gardner et al., 2009).

Over the past nine years, researchers have indicated that hospital personnel in the United States have been aware of the negative impact on patient satisfaction caused by constantly high noise levels and how some health care facilities have adopted the philosophy of a quiet environment to promote healing (Boehm & Morast, 2009; Fisher, 2008; Gardner et al., 2009; Kirkie, 2008; Ryherd et al., 2008; McManis, 2008; Murphy et al., 2013; Shattell, Hogan, & Thomas, 2005). The purpose of this paper is to describe a quiet time innovation in one Canadian health care institution.

**Quiet Time Innovation**

**Motivation for innovation**

After attending the Canadian Association of Neuroscience Nurses (CANN) Annual Board and Scientific Session in Ottawa, Ontario in 2011 it became apparent from discussions with neuroscience colleagues across Canada that the patients cared for in our ANSDU would benefit from a quiet time intervention. Two nurses who formed a quiet time working group developed and implemented this innovation in an ANSDU, which is located in a large tertiary care facility in Winnipeg, Manitoba.

**Steps taken to gain innovation support**

The two nurses who formed the quiet time working group gained support for this innovation from the management and administrative team by developing a project plan that was based on the literature review and concerns expressed by patients and families. This project plan was presented to the ANSDU clinical manager, who found merit in the innovation and shared it with the surgery director. The surgery director also believed this was a worthwhile innovation and was successful in gaining executive support from the chief nursing officer for a trial in the ANSDU.

**Patient population**

**Patient characteristics.** The patient populations cared for in this ANSDU have a multitude of neurological issues including: brain tumours, cerebral aneurysm, traumatic brain injuries, spinal cord injuries and spinal cord tumours. They are critically ill and require invasive intracranial pressure monitoring, as well as frequent neurological and hemodynamic assessments. Admission to the ANSDU is usually unexpected, often as a result of an accident or medical emergency. Due to the severity of the neurological issues and the unpredictability of patient outcomes, the number of staff required to interact with the patient is extensive. For example, a patient admitted post surgically for a brain tumour removal will require assessments by nursing, physiotherapy, occupational therapy, nutritional services, and the cancer care social worker, as well as the neurosurgical team who performed the surgery. This list of individuals does not include other members of the health care team who may be consulted or the patient’s support network. One can see that the number of interactions for a patient is numerous.

**Setting**

**Physical environment.** The unit targeted for the quiet time innovation was an ANSDU. The unit is one large room with the nursing station located in the centre. Eight patient beds are placed around the central nursing station in a horseshoe shape. Due to limited space, curtains separate patient beds. Two rows of windows are situated next to six of the eight beds, which have window coverings to decrease the sunlight coming through them. Bedside and central nursing station lighting exist and can be controlled independently of one another. A double door separates the step down unit from the 20-bed general ward.
Noise level. Despite the small physical size of the unit, two fire alarm bells are present. Each patient bed space has a hemodynamic monitor, used to monitor the patient’s cardiac rhythm, blood pressure, oxygen saturations, intracranial pressure, central venous pressure and respiratory rate. All of these parameters require alarms associated with them and a hospital executive directive states the alarm volume cannot be less than 60% of maximum at any time (C. Farmer, personal communication, September 6, 2011). Further alarms from intravenous pumps, enteral feeding pumps and bed exiting alarms contributed to the noise level, as well as nursing interventions such as the suctioning of patients. The step down unit has an occupancy rate greater than 90%, meaning at least seven patients nursed in the step down unit have invasive monitoring and require frequent assessments and interventions.

The ANSDU is to provide the best possible environment and opportunity for a patient to heal. However, the constant interactions between individuals (e.g., patients, staff, visitors) and the alarms from the equipment make the noise level in the step down unit deafening. With all this information in mind, the quiet time working group developed a quiet time innovation to address the noise and its impact on patients’ ability to rest.

Engagement of individuals involved in the innovation

It was a priority of the quiet time working group that all individuals impacted by this innovation were aware of its implementation and its rationale (Langton, Robbins, & Judge, 2013). To begin, nursing staff, ancillary staff, medical team, and allied health professionals received education sessions focusing on the impact of constant noise and stimulation on the neuroscience patient population and the detrimental effects of sleep deprivation. These education sessions occurred in an informal setting, often only taking 10 minutes in a location that was convenient for the staff. All members of the team were supportive of the quiet time innovation and felt it would be beneficial to the patient population in the ANSDU.

To educate other important members of the team including the patient, families and visitors, the quiet time working group developed posters and a brochure describing the purpose of quiet time and what it was to look like. These posters were placed at each patient’s bedside and the bedside nurse or unit assistant distributed a brochure to each patient/family member/visitor upon admission to the unit.

Components of the quiet time innovation

Following recommendations described in the literature, the time between 1400 and 1600 was designated as quiet time. This time period corresponds with a natural low point in a human’s circadian rhythm, which facilitates the body’s ability to naturally rest (Dennis et al., 2010; Gardner et al., 2009; Olson et al., 2001; Ruggiero & Dziedzic, 2004). Rest was promoted by ensuring the patient was positioned comfortably and analgesia offered so pain would not disrupt rest (Gardner et al., 2009). The level of light in the step down unit during quiet time was reduced by closing a minimum of 80% of the window coverings, as well as dimming or turning off the lights at the patients’ bedsides and dimming the lights at the central nursing station (Gardner et al., 2009). The curtains between the beds were closed half way so that the patient could not see the person in the next bed or be impacted by neighbouring activity or light, but nurses were still able to see the patients and determine if additional assistance or interventions were needed (Gardner et al., 2009). The double doors between the step down unit and the general ward were closed. Families and visitors were encouraged to allow the patient to rest and sleep, but were not required to leave the bedside (Gardner et al., 2009). If the family member or visitor wanted to stay, they were encouraged to be as quiet as possible. Staff was encouraged to use the quietest voice possible when communicating with patients and other team members (Gardner et al., 2009). When appropriate, the amount of routine nursing care, therapies, tests, consults and admissions were reduced during this time (Gardner et al., 2009). This was not always possible due to the high acuity and occupancy of the step down unit. Scheduling of the operating room slate often required the admission of patients during this time, but every effort was made to do so as quietly as possible so as to not disrupt the other patients’ time of rest.

Feedback about the quiet time innovation

While a formal evaluation of the quiet time innovation has not been conducted, anecdotal feedback received six months after innovation implementation suggests the quiet time has had a positive impact. As the primary focus of the quiet time innovation was to improve the patient’s ability to rest by decreasing the noise level in an ANSDU, the quiet time working group spoke to patients about their feelings and experiences regarding quiet time. The statements received from patients have included, “This is wonderful, what a great idea”, “I found the noise overwhelming in here, but when the lights go dim I finally have some relief from my headache” and “It gives my mom permission to leave for a little bit”. These statements imply that the patients in the ANSDU appreciate the decrease in noise level and stimulation that occurs during quiet time.

Visitors have responded stating, “It [quiet time] lets the patient get the rest that they need”, and “Now I don’t feel guilty leaving for a little bit, because I know that he is sleeping while I am gone”. This, again, demonstrates that the individuals impacted by the quiet time innovation believe it is a positive intervention and one that is necessary for the patient to heal.

Surprisingly, the quiet time innovation also seems to have positively impacted nursing satisfaction. When the quiet time working group spoke to staff they said, “This is the best part of the day”, “I finally have time to review my patient’s chart and ensure that things are not getting missed”, and “We should have a quiet time out of the ward as well”. This feedback received from the staff replicates the positive staff satisfaction described in the literature (Gardner et al., 2009). Staff, patients and visitors all appear to appreciate a quiet environment.
Conclusion

Despite the known benefits, no published research about quiet time innovations in the Canadian hospital setting exists. In this paper, we describe the importance of quiet time and how a small but feasible innovation was carried out in an ANSDU. Anecdotal evidence from patients, families, and staff suggests that quiet time may have positive effects not only for the patients, but also for their families and visitors and the adult neuroscience step down unit staff. Future research examining the quantitative and qualitative effects of quiet time will determine the impact of such innovations on patient, family and staff satisfaction, as well as patient healing beyond the anecdotal evidence presented here.

REFERENCES


Acknowledgements

The author would like to thank “Quiet Time” team members Jennifer Schneider, Wendy McDiarmid, Raj Mongru, and all the staff (allied health, neurosurgery medical team and nursing) on GA5 at the Health Sciences Centre, Winnipeg, Manitoba, for their support, enthusiasm, and commitment to the Quiet Time Innovation. Without all of you this innovation would not be where it is today. A special thanks to the patients and families in the GA5 step down unit.
Primary malignant brain tumours, psychosocial distress and the intimate partner experience: What do we know?

By Dr. Brenda Sabo, RN, PhD

Abstract

From the time of diagnosis of a primary malignant brain tumour (PMBT) and throughout the illness trajectory, the patient and intimate partner face many psychosocial challenges ranging from fear and uncertainty to hope and loss (Fox & Lantz, 1998; Janda et al., 2007; Kvale, Murthy, Taylor, Lee, & Nabors, 2009). While many patients diagnosed with cancer may go on to live with cancer as a chronic illness, this may not be said of individuals diagnosed with a PMBT, in particular those diagnosed with a glioma, the most common form of brain tumour (Gupta & Sarin, 2002). Gliomas are associated with a short disease trajectory and multiple deficits (functional, cognitive and psychiatric). What makes the PMBT experience unique from other cancers is that the intimate partner must not only deal with the diagnosis of cancer in their spouse, but also the accompanying personality, functional and behavioural changes wrought by the disease, as well as grieve the loss of the person they once knew (Sherwood et al., 2004). These multi-dimensional deficits are thought to place the intimate partner, as caregiver, at greater risk for adverse psychosocial effects such as anxiety, depression and post traumatic stress (Goebel, von Harscher, & Mehdorn, 2011; Keir, Farland, Lipp, & Friedman, 2009).

The following discussion will provide an overview of the extant literature on the experience of living with a PMBT from the intimate partner (spouse) perspective with a particular emphasis on how intimate partners cope. The intimate partner is considered to be the heterosexual or same-sex, married or common-law partner of the patient. Highlights from the psychotherapy practice of the author will be used to further strengthen the need for more research, education and enhanced practice to more effectively meet the unique needs of this under-researched and supported population.

Retraction

Please note: the article “Challenges in providing culturally-competent care to patients with metastatic brain tumours and their families” printed in Volume 36, Issue 2, p.8, by Longo and Slater, was not the 2013 Brain Tumour Foundation Award paper. The following discussion will provide an overview of the extant literature on the experience of living with a PMBT from the intimate partner perspective with a particular emphasis on how intimate partners cope. The intimate partner is considered to be the heterosexual or same-sex, married or common-law partner of the patient. Highlights from the psychotherapy practice of the author will be used to further strengthen the need for more research, education and enhanced practice to more effectively meet the unique needs of this under-researched and supported population.

La tumeur cérébrale maligne primaire, la détresse psychosociale et l’expérience du partenaire intime: Que savons-nous?

Résumé

À partir du moment où on leur révèle le diagnostic d’une tumeur cérébrale maligne primaire (TCMP) et tout au cours de l’évolution de la maladie, les patients et leur partenaire intime sont confrontés à de multiples défis psychosociaux qui vont de la peur et de l’incertitude à l’espoir et au sentiment de perte. Bien que de nombreux patients atteints d’un cancer puissent continuer à vivre avec ce cancer comme s’il s’agissait une maladie chronique, il n’en va pas de même pour les individus chez qui on a diagnostiqué une TCMP, en particulier ceux atteints d’un gliome, la forme de tumeur cérébrale la plus répandue. Ce qui rend l’expérience d’une TCMP unique par rapport aux autres formes de cancer est que les partenaires intimes doivent non seulement gérer le fait que leur conjoint(e) est atteint(e) d’un cancer, mais également les changements de personnalité, de fonctionnalité et de comportement que provoque la maladie, ainsi que faire le deuil de la personne qu’ils connaissaient jadis. On pense que ces déficiences dans divers domaines exposent les partenaires intimes, dans leur rôle de soignant, à des risques d’effets psychosociaux tels que l’anxiété, la dépression et le stress post-traumatique. Ce document de réflexion fait le point sur la documentation actuellement disponible sur la réalité de vivre avec une TCMP depuis la perspective du conjoint ou de la conjointe, tout en mettant l’accent sur la façon dont ces derniers gèrent la situation. Nous recourrons à des points saillants issus du travail de l’auteure en psychothérapie afin de renforcer davantage la nécessité d’effectuer plus de recherches, d’éducation et de pratique en vue de répondre plus efficacement aux besoins uniques de cette population qui fait l’objet de trop peu de recherche et de soutien.

Setting the context: Primary malignant brain tumours

Approximately 2,700 Canadians are diagnosed annually with a PMBT. This equates to 8/100,000 people, but the numbers increase to 32/100,000 when one takes into account metastases to the brain (Canadian Cancer Society’s Steering Committee on Cancer Statistics, 2011). The most common form is glioma with a relative five-year survival of 23% (Canadian Cancer Society’s Steering Committee on Cancer Statistics, 2011). Although Stage I–III (low grade) may see median survival rates of 10 years, the average survival for a Stage IV glioblastoma is approximately 1–3 years (Taphorne, Sizoo, & Bottomley, 2010) with many living less than 12 months. Approximately 1.4% of all new cancers
are PMBT with a median age at diagnosis of 57 years, although the highest rate of occurrence ranges between 45 years to 75 years. Primary malignant brain tumours make up 2.4% of all cancer deaths (National Cancer Institute, 2013). In the first year after diagnosis, the average patient will make 52 visits to their health care team (Brain Tumour Foundation of Canada, 2013) suggesting a compromised quality of life and need to ensure patients are supported not just physically, but also psychologically and emotionally. It would seem reasonable to think that the frequent interactions with the health care team, whether through appointments with their oncology specialist, imaging team, or emergency department visits, would take a toll on the psychosocial and physical health of the spouse.

PMBTs include all malignant tumours of the brain: frontal, temporal, parietal and occipital lobes; cerebellum; and, brain stem (World Health Organization, 2010). Despite the severity of neuro-cognitive, neuro-functional and neuro-psychiatric symptoms associated with a PMBT in many patients, there is a glaring absence of research focused on the intimate partners’ concerns, challenges and ability to cope with the changes in their partners (Keir et al., 2009; Norton & Manne, 2007; Sherwood et al., 2004) or the effect of a PMBT on the couple relationship, a second major gap noted in the literature (Janda et al., 2008; Janda et al., 2007; Strang, Strang, & Ternestedt, 2001). A recent search of the research literature (CINAHL, PUBMED, PSYCINFO) using the key words primary malignant brain tumour, brain tumour, psychosocial, distress, couples, intimate partners and/or caregiver reinforced the lack of attention given to this issue with less than 20 articles found. No articles explored preferred coping style, the quality of the couple relationship and distress on adjustment and overall quality of life for either spouse or patient.

**Primary malignant brain tumours and psychosocial distress**

PMBT carries significant psychosocial distress (e.g., depression, anxiety, stress) (Arnold et al., 2008; Kanter, Mammonne D’Agostino, Daniels, Stone, & Edelstein, 2013) and lower quality of life for patients and their intimate partners than other cancers (Gustafsson, Edvardsson, & Ahlström, 2006; Janda et al., 2007; Kvale et al., 2009), yet the rate of unmet supportive care needs for both is high (Hodgkinson et al., 2007). Although research has shown that psychosocial distress changes over the disease trajectory for both patient and partner, greater emphasis has been on the patient’s level of distress with little attention given to the intimate partner or the couple, as a unit (Badr, Carmack, Kashy, & Cristofanilli, 2010; Hodgkinson et al., 2007; Janda et al., 2007; Ross, Mosher, Ronis-Tobin, Hermele, & Ostroff, 2010). Rather than respond to the situation on an individual level, intimate partners, family members and cancer patients react to cancer and its treatment as one emotional unit leading to increased levels of psychosocial distress (Fox & Lantz, 1998; Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008b; Segrin, Badger, Dorros, Meek, & Lopez, 2007) highlighting the need for research that takes into account the effect cancer has on the intimate partner.

Increased psychosocial distress, defined as “a multi-factorial unpleasant emotional experience of psychological (cognitive, behavioural, emotional) social, and/or spiritual nature that may interfere with the ability to cope with cancer” (National Comprehensive Cancer Network, 2010, p.DIS-2) may have deleterious physical and psychosocial effects on the intimate partner, which can affect the health of the patient and entire family unit. Factors associated with the variability of psychosocial distress include the reality of day-to-day life, ability to adjust to life after a diagnosis of cancer (coping style), treatment modality(s), and change in prognosis (Hodgkinson et al., 2007; Ross et al., 2010). Of concern is the limited understanding of psychosocial distress experienced by intimate partners during the diagnosis to one year early treatment phase (Goebel et al., 2011), as well as screening for distress and referrals for psychosocial support despite effective interventions (Newell, Sanson-Fisher, & Savolainen, 2002).

As a psychotherapist, I have noticed an alarming number of intimate partners of PMBT patients struggle with their inability to cope with how and in what way this disease impacts their life and health. A common refrain, “but it’s not about me”, highlights the isolation and lack of attention given to the caregiver, who is generally the intimate partner. At the same time, the health care system has come to rely heavily on the caregiver to provide physical, psychological and emotional support without routine assessments to determine the capacity to be able to provide such support. Although the need for family-based distress screening and supportive care has been acknowledged, it has yet to become a reality (Kim & Given, 2008). Intimate partners frequently speak of the expectations tied to a caregiving role despite their desire to “be the spouse” and not a health care provider. Any suggestion that they focus on their own needs is often met with resistance and/or perceived as a personal failure. This expectation is likely the result of gendered, sociocultural norms that assume women will take on the burden of caregiving with no questions asked (Armstrong & Armstrong, 2001).

In a study conducted by the author that explored caregiving within the hematopoietic stem cell transplant population, one spouse spoke of reflecting on the experience as a taking on of roles, of coming to a realization that “you have to change... It is not just the person dealing with cancer every day that has to change, it’s everybody” (Sabo, McLeod, & Couban, 2012, p. 35). This population of cancer patients also experiences overall poor prognosis and long-term side effects from the treatment that can be debilitating, such as graft versus host disease and the development of secondary cancers. What appears poorly understood in both the PMBT and hematopoietic stem cell transplant population is the effect such change has on the individual and the couple relationship over time.

More poignant are the intimate partners who describe “wanting more” yet, do not know what more is, or of feeling guilty for wanting more. Intimate partners have shared personal stories of having lost their “best friend, partner and soul mate” although the individual is still alive. Who they married or began the couple relationship with has irrevocably changed; insight around appropriate behaviours, judgement and, at times, the ability to perceive the intimate needs of another through a hug or caring word are slowly lost. The intimate partner may find that life is now composed of uncertainty, of waiting for the other shoe to drop, of fluctuations between hope and despair, of grief and loss. How often do we, as health care professionals, recognize, acknowledge and validate the experience of the
intimate partner, of their needs and the psychosocial implications the devastating news of a diagnosis of a PMBT brings? Should feeling uncomfortable about death and dying, or difficult news, be an excuse to avoid conversations? In one study, it was noted that both patients and families were preoccupied with existential thoughts (e.g., why me) and death anxiety, yet these concerns were often not expressed directly (Adelbratt & Strang, 2000). Patients and families are waiting for health care professionals to bring up these very difficult topics. Not infrequently, they wonder why health care professionals do not address these concerns.

Research suggests that while health care professionals acknowledge 57% of socio-emotional cues, they only respond to approximately 22% of those cues (Kennedy Sheldon, Hilaire, & Berry, 2011). More concerning may be the blocking behaviour engaged in by health care professionals when faced with addressing emotions, (Betcher, 2010), the tendency to focus on physical aspects of care (Graney, Krzyzanowska, Tozer, & Mazzotta, 2013; Rask, Jensen, Andersen, & Zachariae, 2009), or perceptions that conversations about death and end-of-life concerns will cause further distress and remove hope (Anselm et al., 2005). Research has shown that conversations about end-of-life issues and advanced care planning, when done in an empathic, supportive and humanistic way, actually can be beneficial in reducing distress and uncertainty (Stajduhar, Thorne, McGuinness, & Kim-Sing, 2010; Thorne, Hislop, Armstrong, & Oglov, 2005; Thorne, Kuo, et al., 2005; Watts, 2012).

As the disease advances, patients and their spouses would benefit from conversations related to advanced care planning and supportive/palliative care. Communication related to supportive/palliative care and end-of-life issues has been recognized as sub-optimal by both health care professionals and patient/spouse alike (Anselm et al., 2005; Friedrichsen, Strang, & Carlsson, 2000; Ronaldson & Devery, 2001; Stajduhar et al., 2010; Thorne, Hislop, et al., 2005; Thorne, Kuo, et al., 2005). Effective communication between the health care provider, patient and spouse may be critical in the optimization of supportive/palliative care (Gilligan & Raffin, 1996), yet health care professionals appear reluctant to engage in these conversations even when training has been provided to enhance communication skills (Beckman & Frankel, 2003; Ishikawa et al., 2002), or change patterns of communication behaviour (Heaven & Maguire, 1996; Thorne, Hislop, et al., 2005). Despite good intentions, effective communication remains a significant problem with many patients encountering less than optimal communication at some point during their illness (Ishikawa et al., 2002).

Perhaps, more concerning is the cultural shift from death as a natural part of life to death-denying behaviour, as evidenced in an emphasis on curative rather than supportive care. The transition from the former to the latter may be perceived as a "failure". More compelling is the need to recognize and give meaning to life through conversations about death (Bugental, 1965; Yalom, 1980).

In a 2008 stakeholder report, communication challenges were identified as a critical source of concern for patients and families when considered within the context of palliative and end-of-life care (Network for End of Life Studies: Interdisciplinary Capacity Enhancement [NELS ICE], 2008). The report highlighted assumptions held by both patient/family and health care provider alike. These assumptions included the perception of giving up hope, or abandonment, a lack of willingness to talk about palliative and end-of-life issues (e.g., send in "junior doctors"), and differences among health care professionals around what constitutes quality end-of-life care. Striking a balance between acknowledging that an illness is terminal while supporting hope can be challenging yet, if not undertaken, has the potential to lead to compromised quality of care for the patient and family. The need to understand the "intricate complexities of what makes communication helpful or unhelpful ... and the mechanisms to ensure that what we do know is consistently applied in practice" (Stajduhar et al., 2010, p.2045) is paramount if optimal palliative care is to occur.

Primary malignant brain tumours, the couple relationship and coping

A diagnosis of cancer can be an unexpected and devastating event for the intimate partner, frequently resulting in elevated levels of psychosocial distress (Goebel et al., 2011;Ownsworth, Little, Turner, Hawkes, & Shum, 2008). Primary malignant brain tumours are considered to be one of the most aggressive and difficult cancers to treat (Graham & Cloughesy, 2004).

Furthermore, the disease trajectory includes progressive functional decline (Price, Goetz, & Lovell, 2002). Not only are these tumours life-threatening, but also they carry the potential to rob the patient of their mind and spirit (Fisher & Buffler, 2005). Research has shown that at least 33% of patients diagnosed with a PMBT exhibit high levels of anxiety, depression and poor quality-of-life outcomes (Ownsworth et al., 2008; Pringle, Taylor, & Whittle, 1999). The rate of psychosocial distress for intimate partners has been shown to be as high as, if not higher than that of cancer patients in general (Hagedoorn et al., 2008b; Hudson & Payne, 2011; Langer, Yi, Storer, & Syrjala, 2010). Further, individuals (intimate partner and patient) vary in their ability to adjust to life after a diagnosis of a PMBT. In one systematic review of the literature, the authors concluded cognitive and behavioural function alone could not adequately account for emotional adjustment and quality of life (Ownsworth, Hawkes, Steginga, Walker, & Shum, 2009). The review also noted that personal resources such as coping style and self-perception (appraisal of circumstances), as well as socio-environmental factors (relationship, support networks) have largely been ignored in research studies (Kraemer, Stanton, Meyerowitz, Rowland, & Ganzi, 2011; Ptacek, Peirce, & Ptacek, 2007).

Much of our understanding of the effect of cancer on intimate partners has emerged from research within breast and prostate cancer populations. Findings suggest that the disruption arising from the demands of cancer can undermine even the most highly functioning intimate partner relationship (Fergus & Gray, 2009; Merz et al., 2011). Common stressors for the intimate partner include fear, loss, thoughts of mortality and abandonment stemming from the diagnosis (Hagedoorn, Sanderman, Bolks, Tuijnstra, & Coyne, 2008a; Maliski, Heilemann, & McCorkle, 2002), renegotiation of family roles and responsibilities (Langer et al., 2010; Northfield & Nebauer, 2010; Sabo et al., 2012), increased financial strain (Armstrong & Armstrong,
Implications for nursing practice, education and research

Screening for distress has become the standard of care within the cancer care system for several Canadian cancer centres. Health professionals struggle to do that well, particularly when there are limited resources to address the needs of those identified as distressed, as is often the case (Bultz & Johansen, 2011). In light of the significant symptom burden, poor overall prognoses and decreased quality of life associated with a PMBT, strategies that enhance knowledge and understanding and support deeper reflection of the psychosocial implications of PMBTs may have the potential to improve quality of care and outcomes for intimate partners.

Furthermore, such strategies may also serve to empower health care professionals and reduce their own distress. The development and pilot testing of digital stories recounting the personal experiences of caregiving may be an effective mechanism for addressing research and clinical knowledge gaps such as those related to the intimate partner experience, psychosocial distrust and adjustment within cancers such as PMBT. Digital stories are “short, personal narratives that use still images and music captured through the use of digital media...to merge the richness inherent within traditional patient narratives with an ability to focus, edit and reflect, to produce a story that is engaging, powerful and directly accessible to others” (Christiansen, 2011, p. 290). As such, digital stories have much to offer health care professionals and students alike.

With greater emphasis on patient/family or relationship-centred care delivery, approaches to education that enhance awareness, empathy and the meaning of existentially important experiences become imperative. Illness narratives afford the nurse an opportunity to access the human experience (Kumagai, 2008; Sandelowski, 1991) discover knowledge, uncover hidden meaning and support caring (Kumagai, 2008; Sandelowski, 1991) through “entry into the kingdom of the sick” (Sontag, 1978). From a pedagogical perspective, stories can make challenging information coherent, meaningful and easily understood by situating complex concepts into practice and practical situations (Lave & Wenger, 2002; Wenger, McDermott, & Snyder, 2002). The use of storytelling through multimedia approaches would foster active engagement in reflection by nurses and nursing students alike through the use of real life situations, thus promoting deeper learning from the experience (Christiansen, 2011; Sandars, Murray, & Pellow, 2008), as well as supporting the translation of knowledge (Scott, Hartling, O’Leary, Archibald, & Klassen, 2012). Furthermore, integration of digital stories as one aspect of continuing education may be transformative by challenging the nurse’s existing world-view (values, beliefs) through self-reflection (Brown, Kirkpatrick, Magnus, & Avery, 2008; Kozubska & MacKenzie, 2012; Kumagai, 2008). The ability to look critically at one’s own practice, to identify areas for improvement, and apply this new knowledge and awareness to one’s practice is considered an essential element in continuing professional development (Johns, 2006).

More research utilizing theoretical models such as the relational intimacy model of couple psychosocial adaptation to cancer (Manne & Badr, 2008), dyadic adjustment (Spanier, 1976) and resiliency (Walsh, 2006) may be helpful in capturing a more robust picture of the psychosocial implications of caregiving by intimate partners within the PMBT population, leading to effective strategies for distress management and relational quality. Interventional research focused on implementing and evaluating distress screening for intimate partners may lead to more effective psychosocial support for the caregiver, as well as help to normalize a natural consequence of caregiving, psychosocial distress.

What can nurses do to acknowledge and support both patient and family? Nurses may start by opening discussions with other members of the health care team around early referral to the palliative/supportive care consultation team. In a system that places greater emphasis on acute curative intent (Thorne, 2008), health care professionals such as doctors and nurses have a tendency to avoid or put off the challenging conversations about death and dying. This may be for a variety of reasons including: 1) fear that hope will be destroyed for patients and their family members; 2) that such a conversation may result in further distress; or 3) they do not feel adequately equipped to enter into such discussions and/or respond to the emotions that may ensue (Anselm et al., 2005). Failure to acknowledge the need to transition to palliative/supportive care in a timely way may erode the client/health care professional relationship,
decrease quality of life, autonomy and decision-making control, and heighten levels of anxiety and depression (Stajduhar, 2011; Stajduhar et al., 2010). Studies have shown that patients would like to have conversations about advanced and end-of-life care planning, but wonder why HCPs do not raise the issue (Barnes et al., 2011). Furthermore, they would like these conversations to occur in an empathic, humanistic and supportive manner (Thorne, Hislop, et al., 2005; Thorne, Kuo, et al., 2005). Unfortunately, it is not uncommon for patients to learn of the terminal nature of their illness on referral to palliative care services (Ronaldson & Devery, 2001). Including education for both patients and families about the benefits of timely referral to palliative care may go a long way towards decreasing perceptions of abandonment and loss of hope among patients and families (Barnes et al., 2011; Schofield, Carey, Love, Nehill, & Wein, 2006; Stajduhar, 2011; Stajduhar et al., 2010; Thorne, Hislop, et al., 2005; Thorne, Kuo, et al., 2005).

Another important step may be the acknowledgement and validation of the impact caregiving may have on the psychosocial and emotional well-being of spouses and other family members. Nurses should consider how and in what way screening for distress might include the caregiver. Simple questions such as: “How are you today?”; “What do you need?”; and “What have you done for yourself lately?” may open the door to further conversation about the spouse or family member’s level of psychosocial health and well-being. I vividly recall a spouse telling me that not once did any health care professional ask her how she was doing during her husband’s illness, which included a stay in the intensive care unit. Even more disappointing was the fact they never once asked how her 14-year-old son was doing. Screening for distress should routinely occur at critical stress points in time such as diagnosis, cessation of treatment, recurrence and end of life. Furthermore, patient/family education should encompass self-care strategies for the caregiver.

Finally, continuing education for nurses that includes how to enter into difficult conversations (e.g., death and dying), as well as personal reflective practice techniques may be helpful in enhancing nursing care delivery.

Conclusion

While research is growing on psychosocial distress within cancer patient populations, little attention has been given to the implications a diagnosis of cancer may have for the spouse, particularly the spouses of PMBTs. Our understanding of the role and quality of the couple relationship, ability to cope, and level of distress on quality of life and ability to adjust following a diagnosis of a PMBT is limited, highlighting a critical need for more research on this subject.

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14


Development of clinical practice guidelines for urinary continence care of adult stroke survivors in acute and rehabilitation settings

By Andrea R. Fisher, RN, MSN, MSc, CNN(C), Infection Control Professional

Abstract
This study developed evidence-based clinical practice guidelines for the urinary continence care of adult stroke survivors in acute and rehabilitation settings. The research team conducted a comprehensive review of the literature on urinary continence interventions and outcomes. The team then developed a set of recommendations outlined in the resulting clinical practice guidelines titled Clinical Practice Guidelines (CPGs) for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings.

The evaluation of the CPGs consisted of a two-part assessment and pilot implementation. An expert panel of 25 local and regional experts in stroke and continence care assessed the proposed CPGs. This assessment consisted of two stages: a) evaluating the guidelines using the Appraisal of Guidelines Research and Evaluation (AGREE) Instrument (http://www.agreetrust.org); and, b) conducting focus groups to identify barriers and facilitators to the implementation of the guidelines.

Two sites conducted a three-month pilot implementation of three recommendations from the CPGs as selected by each site. The two inpatient sites were a rehabilitation setting and a mixed acute and rehabilitation setting. The implementation of the CPGs included the development of learning strategies tailored to the needs of each site and in addition to the creation of an online self-learning portal. This study assessed nurses’ knowledge, attitudes, and beliefs regarding urinary continence challenges using a survey before and after the pilot. Chart reviews before and after the pilot implementation audited the nurses’ urinary continence practices for patients and uptake of the selected guidelines’ recommendations. Study findings suggested the implementation of the CPGs’ recommendations improved nurses’ knowledge of the continence needs of stroke survivors.

L’élaboration de directives de pratique clinique pour le traitement de l’incontinence urinaire chez les victimes d’AVC dans les services de soins de courte durée et de réadaptation

Résumé
Cette étude a permis de développer des directives de pratique clinique fondées sur des données probantes en vue de traiter l’incontinence urinaire chez les victimes d’AVC dans les services de soins de courte durée et de réadaptation. L’équipe de recherches s’est livrée à un examen exhaustif de la documentation sur les interventions favorisant la continence urinaire et leurs résultats. L’équipe a ensuite élaboré un ensemble de recommandations décrites dans les directives de pratique clinique en découlant et intitulées Clinical Practice Guidelines (CPGs) pour le Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings (Directives de pratique clinique [DPC] pour le traitement de l’incontinence urinaire chez les victimes d’AVC dans les services de soins de courte durée et de réadaptation).


Deux sites ont chacun choisi trois recommandations issues des DPC, puis ont mis en œuvre un projet pilote de trois mois. Le premier de ces deux sites hospitaliers offrait des services de réadaptation, et le second, un mélange de soins de courte durée et de réadaptation. La mise en œuvre des DPC comprenait l’élaboration de stratégies d’apprentissage adaptées aux besoins de chaque site, en plus de la création d’un portail d’auto-apprentissage en ligne. Cette étude a évalué les connaissances, les attitudes et les croyances du personnel infirmier à l’égard des défis liés à la continence urinaire au moyen d’une enquête réalisée avant et après le projet pilote. L’examen des dossiers avant et après la mise en œuvre du projet pilote a servi à vérifier les pratiques des infirmières et infirmiers en matière de continence urinaire chez les patients et l’application des recommandations choisies. Les résultats de l’étude suggèrent que la mise en œuvre des recommandations des DPC a amélioré les connaissances du personnel infirmier au sujet des besoins en matière de continence chez les survivants d’AVC.
Background

Urinary incontinence is the involuntary loss of urine and can be defined by the type of storage and voiding symptoms (Abrams et al., 2010). Urinary incontinence is common among stroke survivors and is associated with higher levels of mortality, disability and discharge to long-term care, as compared to survivors without continence issues (Dumoulin, Korner-Bitensky, & Tannenbaum, 2007; Wilson, Lowe, Hoffman, Rudd, & Wagg, 2008). Data from the National Stroke audits for England, Wales and Northern Ireland from 1998–2002 reported urinary incontinence rates between 39% and 44% one week after stroke, which remained an issue for 15% to 20% of stroke survivors at time of discharge from hospital (Wilson et al., 2008). Stroke survivors can experience various types of urinary incontinence such as stress, urge, overflow, functional, mixed and/or transient incontinence. Table 1 shows questions that could help identify the type of urinary incontinence and can be asked as part of a patient history and physical (Registered Nurses’ Association of Ontario [RNAO], 2005). Urinary retention has been less well studied for stroke survivors. One study in a rehabilitation setting reported a prevalence of 21.5% (Wu & Baguley, 2005).

Addressing the urinary continence needs of stroke survivors may prevent complications such as skin breakdown and urinary tract infections, which may result in prolonged hospital stays. A systematic review of outcomes for stroke survivors identified urinary continence accompanied by cognition impairment as a key factor for poor outcomes (Almenkerk, Smalbrugge, Depla, Urquhart, & Tannenbaum, 2010). Urinary incontinence is common among stroke survivors and is associated with higher levels of mortality, disability and discharge to long-term care, as compared to survivors without continence issues (Dumoulin, Korner-Bitensky, & Tannenbaum, 2007; Wilson, Lowe, Hoffman, Rudd, & Wagg, 2008).

Table 1: Types of urinary incontinence

<table>
<thead>
<tr>
<th>Type of urinary incontinence</th>
<th>Questions</th>
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<tbody>
<tr>
<td>Stress</td>
<td>Is a loss of urine with coughing and/or sneezing resulting in increased abdominal pressure?</td>
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<tr>
<td>Urge</td>
<td>Is the involuntary passage of urine occurring soon after a strong sense of urgency to void?</td>
</tr>
<tr>
<td>Overflow</td>
<td>Is the involuntary loss of urine associated with bladder over-distention? Total incontinence is a continuous and unpredictable loss of urine.</td>
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<tr>
<td>Functional</td>
<td>Is urinary leakage associated with inability to access the toilet because of impairment of cognitive and/or physical functioning or an environmental barrier?</td>
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<tr>
<td>Mixed</td>
<td>Is urine loss having features of both stress and urge?</td>
</tr>
<tr>
<td>Transient</td>
<td>Is urine loss resulting from causes outside of, or affecting the urinary system such as acute confusion, infection, atrophic urethritis or vaginitis, medications, psychological conditions, restricted mobility or stool impaction?</td>
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</table>

However, studies identifying and evaluating interventions to address urinary dysfunction among stroke survivors have failed to yield comprehensive clinical practice guidelines (CPGs) for this population. Clinical practice guidelines have been defined by the Institute of Medicine (National, Heart, Lung, and Blood Institute, 2011) as: “statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.” This article discusses the development of CPGs to improve the urinary continence care of adult stroke survivors titled Clinical Practice Guidelines for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings (See Appendix A), and provides an overview of a pilot implementation of select evidence-based recommendations. The study objectives were to: 1) conduct a literature review to obtain information about urinary management for stroke and geriatric patients, 2) identify key factors that may be barriers and facilitators to practice, and 3) develop and implement CPGs in acute and rehabilitation settings. The Ontario Ministry of Health and Long-term Care provided funding for this project.

Methods

Search strategy and literature review

The research team conducted a comprehensive literature review. The overall topic was urinary incontinence care for stroke survivors. To optimize the literature review process the team generated a list of terms and key words in three categories: population, interventions and outcomes. The search inclusion criteria were the specific populations and demographics relevant to the study: stroke patients, brain injury patients, acute care patients, rehabilitation care patients, long-term care patients, inpatient care patients, community care patients, geriatric populations, gender, class and cross-cultural characteristics. Literature pertaining to persons younger than 18 years of age was excluded, because the population of interest was adults. The inclusion criteria also comprised documentation tools and clinical practice interventions, management techniques, self-managed care, complementary health care and diagnostic tools.

Since the focus was on post-stroke care, interventions for the following conditions were excluded: irritable bowel syndrome, colitis, inflammatory bowel disease, urinary disorders, post-partum incontinence and bariatric surgery. Also excluded from the search were pharmacological treatments or surgery interventions that were beyond the scope of the proposed CPGs. The search strategies for outcomes included the search strings of fecal incontinence, urinary incontinence, nurse-sensitive outcomes and techniques.

The literature search was performed in April 2007 and limited to English and French publications between 1995 and 2007. Databases searched included: CINAHL, Medline, PubMed, Sage Publications; Embase, Nursing Abstracts and EBSCO. The academic and scholarly publications in the searches were limited to peer-reviewed articles, clinical research, clinical practice guidelines and best practice guidelines. In addition, members of the research team contacted clinical experts in stroke and/
or continence care at Canadian acute and rehabilitation health care facilities to identify further sources of information such as grey literature that may have been pertinent for the CPG’s content.

Initially, 1,329 articles were identified during the aforementioned databases with 370 duplications. The research team then reviewed abstracts and removed 723 literature articles that did not meet the inclusion criteria. The research team obtained and reviewed the remaining 236 references (see Figure 1). The quality of the literature was appraised using the RNAO’s Level of Evidence hierarchy (see Table 2) and ranked accordingly. During the review process seminal or influential articles from earlier than the search timeframe were identified and included in literature review.

Appendices B and C provide a summary of the key research studies and systematic reviews the research team used in the development of the CPGs. Expert opinion was often used when research was not available. Appendix B contains nine references for urinary retention, mostly with stroke and rehabilitation patients, six studies and three systematic reviews. Systematic reviews addressed catheterization practices in adult populations (Fernandez & Griffiths, 2006; Griffiths & Fernandez, 2007; Niel-Weise & van den Broek, 2007). No published CPGs or best practice guidelines were found for urinary retention in stroke patients.

Appendix C provides a summary of 12 references for urinary incontinence in mostly adult patients, three studies and nine systematic reviews. Two stroke specific references are included, Harari et al., 2004, and Thomas et al., 2005. Harari et al. (2004) conducted a randomized controlled trial (RCT) with stroke patients in the community and rehabilitation and demonstrated the effectiveness of a bowel program. This level of evidence supports the assessment of stroke survivors for constipation by obtaining information about stool frequency, character and consistency of bowel movements and fluid intake. This recommendation is supported by RNAO CPGs, Promoting Continence Using Prompted Voiding (2005).

The second stroke reference is by Thomas et al., 2005. It is a systematic review in stroke adult patients to determine the optimal methods for prevention and treatment of urinary incontinence. The authors reported there was evidence that specialist professional input through structured assessment and management of care and specialist continence nursing may reduce urinary incontinence after stroke. This finding was supported by Borrie, Bawden, Speechley, and Kloseck (2002) in an RCT in adults in an outpatient clinic. The research team chose to recommend an inter-professional team approach because of the wide range of skills and knowledge required for urinary incontinence assessment diagnosis and treatment.

DuBeau, Simon, and Morris (2006) studied quality of life in nursing home residents and found that urinary incontinence was associated with worse quality of life in residents with moderate cognitive and functional impairment. In a systematic review, Fader, Cottenden, and Getliffe (2007) report that only one RCT recommended using continence management products for women with urinary incontinence. These studies provide evidence to support interventions promoting stroke survivors’ dignity using products to manage incontinence.

Recent evidence suggests that conservative approaches for managing incontinence and promoting continence involving pads and toileting are most frequently used for residents in care homes. (Roe et al., 2010). Habit retraining, and timed and prompted voiding are common toileting practices used in care home populations for residents with cognitive or physical impairments, with limited evidence on effectiveness (Eustice et al., 2000; Ostaszkiewicz, Johnston, & Roe, 2004). Clinical practice guidelines have recommended timed and prompted voiding although evidence ratings are low (Agency for Health Care Policy and Research, 1996). The RNAO (2005) developed a best practice guideline for promoting continence using prompted voiding for adults. More research is needed to determine if improved outcomes in urinary incontinence can be achieved in non-stroke populations.

### Table 2: RNAO levels of evidence

<table>
<thead>
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<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>Ia.</td>
<td>Evidence obtained from meta-analysis or systematic review of randomized controlled trials</td>
</tr>
<tr>
<td>Ib.</td>
<td>Evidence obtained from at least one randomized controlled trial</td>
</tr>
<tr>
<td>Ila.</td>
<td>Evidence obtained from at least one well-designed controlled study without randomization</td>
</tr>
<tr>
<td>IIb.</td>
<td>Evidence obtained from at least one other type of well-designed quasi-experimental study without randomization</td>
</tr>
<tr>
<td>III.</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies, and case studies</td>
</tr>
<tr>
<td>IV.</td>
<td>Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities</td>
</tr>
</tbody>
</table>
A synthesis of recommendations for behavioural approaches of internal CPGs by Dumoulin, Korner-Bitensky, and Tannenbaum (2005) reported consensus opinion for three CPGs that timed voiding or prompted voiding should be implemented for urinary retention or incontinence in cooperative and mobile individuals with stroke. These guidelines are from the Agency for Health Care Policy (1996); Research, Veterans Affairs/Department of Defence (2004); and Health Publication, U.K. (2002). Behavioural treatments to teach patients new skills to control the physiologic responses of the bladder and pelvic muscles such as pelvic muscle training exercises and strategies to respond to urgency were not addressed in the CPG. The research team believed that this work was preliminary (CPG) and recognized that further work in this area would need to be addressed at a future time. Studies have demonstrated that behavioural procedures can be implemented in ambulatory settings (Burgio et al., 1998; McDowell, Burgio, Locher, & Rodriguez, 1992).

**Development of draft clinical practice guidelines**

Between 2007 and 2008 the research team synthesized findings from the systematic literature review. A draft set of evidence-based CPGs was developed for the continence care of survivors after the hyper acute or acute phase of stroke care. The intended domain of care is inpatient acute care or rehabilitation settings. The CPGs document was titled *Clinical Practice Guidelines for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings*. The CPGs included recommendations for assessment, interventions for continence management, education for health care professionals, organization supports and policy (see Appendix A). Each recommendation included a ranking of evidence. The CPGs also contained a glossary, medications linked to urinary retention and incontinence, as well as information about continence assessment tools and an intermittent catheterization protocol.

**Evaluation of draft clinical practice guidelines**

The research team identified experts and recognized leaders involved in the provision of stroke care and/or continence care in acute and rehabilitation settings. The experts and leaders include researchers, physicians, advanced practice nurses, clinical nurses, physiotherapists, occupational therapists, administrators and stroke survivors and one family member. These participants constituted the expert panel for the evaluation of the draft CPGs.

The Ottawa Model of Research (OMRU) provided an important framework for the implementation of the guidelines. The OMRU identifies six factors that impact the implementation and uptake of innovations in clinical practice: a) the practice environment; b) the potential research adopters (administrators and clinical staff); c) the evidence-based innovation; d) strategies for transferring the innovation into practice; e) adoption/use of the evidence; and, f) health and other outcomes (Logan & Graham, 1998). The systematic assessment and evaluation of these six factors is central to the OMRU.

The OMRU (Logan et al., 1998) guided the research team to identify barriers and facilitators to the implementation of CPGs in the acute and rehabilitation settings. The researchers, with the expert panel, applied the OMRU in two stages. The first stage involved the assessment of the content, presentation, and applicability of the clinical practice guidelines using the Appraisal of Guidelines Research and Evaluation (AGREE) Instrument (http://www.agreetrust.org). The AGREE Instrument provides a framework for assessing the quality of CPGs. It consists of 23 key items organized in six domains: scope and purpose, stakeholder involvement, rigour of development, clarity and presentation, applicability, and editorial independence. High scores suggested recommendations were feasible for implementation and evaluations. This assessment helped researchers appraise the quality of the CPGs. The second stage involved examination of the practice environment and potential adopters using a “World Café” focus group process to identify barriers and facilitators for the CPGs’ uptake.

The “World Café” (http://www.theworldcafe.com) is a process for bringing people together around questions that matter and is founded on the assumption that people with diverse perspectives have the capacity to construct knowledge through dialogue. The study team obtained written consent from Café participants to participate in the focus groups. A Learning and Development Officer, employed at The Ottawa Hospital, facilitated the World Café process. The Café agenda, addressed in a half-day workshop, included an introduction followed by an overview of the study and activities for the group. Participants dedicated the majority of their time to dialogue and gave their input into three key questions listed in Table 3.

The researchers organized the participants into five tables with five or six participants in each group. One person at each table acted as host and one as recorder, with each question allocated approximately 15 minutes of discussion. Participants changed tables for each question while the host remained. Each table had five minutes to present its discussion findings to its peers.

**Table 3: Key questions addressed by World Café participants**

<table>
<thead>
<tr>
<th>Question</th>
<th>Type of Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the barriers to the implementation of continence care guidelines for stroke survivors?</td>
<td>Qualitative</td>
</tr>
<tr>
<td>2. What are the facilitators to the implementation of continence care guidelines for stroke survivors?</td>
<td>Qualitative</td>
</tr>
<tr>
<td>3. What strategies do you feel will assist with the implementation of continence care guidelines for stroke survivors?</td>
<td>Qualitative</td>
</tr>
</tbody>
</table>

**Pilot site implementation**

In addition to developing CPGs for urinary continence care of stroke survivors, the study team implemented the guidelines in a short-term pilot. The pilot included preparation of educational materials, pre and post chart audits and a knowledge, beliefs and attitudes survey. The *Clinical Practice Guidelines for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings* was piloted for three months at two sites: a) rehabilitation setting; and b) mixed acute care and rehabilitation setting. Respective research ethics boards approved this phase of the study. Members of the research team met with hospital
administrators to ensure a high level of support and engagement during the implementation. The research team collaborated with the clinical managers of the two pilot sites to facilitate a meeting with clinical nurses. The team held three staff meetings with clinical nurses on the stroke rehabilitation unit, two with day shift nurses and one meeting with the evening nurses. The meetings included an educational session about the CPGs, a discussion about potential barriers and facilitators to guideline implementation and finally the researchers asked the clinical nurses to identify the three most important recommendations from the guideline for implementation on their unit. Nurses based their decisions on past experiences and an overall understanding of their clinical environment. The research team selected only three recommendations to implement on each site for several reasons: 1) feasibility to achieve in the short timeframe, 2) most relevant to particular area, and 3) focus on achieving success with a smaller number of interventions. Researchers believed that limiting the number of implemented interventions would facilitate adoption and acceptance. Each meeting with clinical nurses addressed questions and concerns about the three-month pilot implementation roles, responsibilities and expectations. The meetings also acknowledged possible impediments and supports and, when necessary, suggested actions to mitigate impediments to optimize the implementation.

Pilot implementation delays at the combined acute and rehabilitation setting occurred due to unanticipated concurrent clinical priorities. The research team developed a chart audit tool to audit charts over a two-week period pre and post implementation to identify changes in nursing documentation that would indicate adoption of the three piloted recommendations. The study team hired and trained a research assistant to conduct the chart audit.

Education approach
The research team developed educational materials that included the following topics: a) a general presentation on continence issues for the post stroke survivor; b) a reference manual with an overview of the clinical interventions linked to the selected recommendations; and c) an online self-learning portal. The study team created an online self-learning portal to support the implementation of clinical practice guidelines for the urinary continence management of stroke survivors in acute and rehabilitation settings. The portal consists of interactive learning modules including: a) evidence-based recommendations; b) instructional videos; c) interactive care scenarios; d) learning assessments; and e) supplementary materials such as assessment tools and clinical algorithms. A blogging platform (i.e., Wordpress) was the architecture and template system for the website, which allowed for interactivity.

The research team developed education strategies tailored for each site based upon the recommendations selected for implementation. Hence, each site used different material and strategies. The rehabilitation setting employed a combination of group educational sessions using PowerPoint presentations, skills fair day, posters and pocket cards on timed and prompted voiding differences. The mixed acute and rehabilitation setting used structured group education sessions with short PowerPoint presentations.

Nursing knowledge, attitudes and beliefs
The nurses completed the Knowledge, Attitudes and Beliefs Survey (KABS) (Evaluation of IC5: Improving Continence Care in Complex Continuing Care, Report for the Ontario Women’s Health Council, 2006). The researchers intended to help raise awareness about continence care, highlight knowledge deficits and determine the beliefs held by the nurses using this survey. The true-false KABS survey was developed previously, as part of the IC5 Collaborative Project; Improving Continence Care in Complex Continuing Care Hospitals in Ontario, Canada.

Results
Guideline evaluation
Eleven expert panel members evaluated the Clinical Practice Guidelines for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings using the AGREE Tool. Of the 25 panel participants, 11 completed written evaluations, which were reported to take one hour to perform. The less than 50% completion rate could possibly be explained by the fact that the tool can take one hour to complete and that frontline clinicians, including staff nurses, may not have any experience or training conducting AGREE Tool evaluations. Participants scored the evidence-based recommendations and also provided qualitative comments on the scope, content, and presentation of the guidelines. All of the participants strongly recommended (n=3) or recommended with revisions (n=8) the evidence-based recommendations. Participants recommended the guidelines for further evaluation. Table 4 summarizes The AGREE Tool domain scores and overall assessment. Because the development of the clinical practice guidelines was in an interim stage, there was insufficient information available to score certain categories. The AGREE Tool scores were, consequently, low in several sub-categories, such as stakeholder consultation and pilot implementation. The evaluation nonetheless identified areas that needed further revisions, including the overview of the methods, stakeholder consultation, and overall presentation. Informal feedback from the participants demonstrated support for the development work and recognized the importance of

<table>
<thead>
<tr>
<th>Table 4: AGREE tool scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTENT AREA</strong></td>
</tr>
<tr>
<td>Scope &amp; Purpose</td>
</tr>
<tr>
<td>Stakeholder Involvement</td>
</tr>
<tr>
<td>Rigour of Development</td>
</tr>
<tr>
<td>Clarity &amp; Presentation</td>
</tr>
<tr>
<td>Applicability</td>
</tr>
<tr>
<td>Editorial Independence</td>
</tr>
</tbody>
</table>
| Overall assessment | Recommended with revisions (n=8)  
Strongly recommended (n=3) |
implementing the guidelines. Comments from the expert panel were positive and minor editing suggestions were made to CGPs prior to implementation.

Table 5 summarizes the findings from the focus group participants at the World Café in relation to the three questions the research team asked them to address. Participants identified three barriers for the implementation of continence care guidelines: 1) lack of adequate resources, 2) attitudes of health professionals, stroke survivors, and caregivers, and 3) a lack of continuity of continence care. Participants proposed that clinical practice champions, practice guidelines, and structured support could facilitate guideline implementation. In addition, the focus group participants suggested three strategies to assist with guideline implementation: using practice champions, developing a standardized educational program, and implementing the guidelines in an incremental manner. The research team included these suggestions into the planning for the pilot implementation.

Table 5: Findings from World Café focus group participants

<table>
<thead>
<tr>
<th>Question 1: What are the barriers to the implementation of continence care guidelines for stroke survivors?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lack of adequate resources:</strong> Participants identified that a lack of adequate resources was a significant barrier to the implementation of clinical practice guidelines for the continence care of stroke survivors. Inadequate resources included a perceived lack of nurses available to implement the guidelines, inadequate facilities, and insufficient time to follow the suggested recommendations.</td>
</tr>
<tr>
<td><strong>Attitudes of health professionals, stroke survivors and caregivers:</strong> Participants noted that the attitudes of health professionals acted as a barrier to continence care of stroke survivors. Examples of negative attitudes include cultural and personal beliefs regarding continence care; low priorities regarding continence care; resistance to practice changes among health professionals; and the belief that continence challenges are acceptable.</td>
</tr>
<tr>
<td><strong>Lack of continuity of continence care:</strong> Participants noted that there was a lack of continuity of continence care for stroke survivors. Contributing factors included absence of clinical practice guidelines, lack of interprofessional communication, and staff turnover.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2: What are the facilitators to the implementation of continence care guidelines for stroke survivors?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best practice guideline champions:</strong> Participants indicated that support and advocacy from guideline champions, such as clinical managers and nurse educators, were key facilitators to the successful adoption of the CPGs for the continence care of stroke survivors at implementation sites. The champions play a critical role as they encourage nurses to implement guidelines and help other health professionals to support the use of guidelines in rounds.</td>
</tr>
<tr>
<td><strong>Best practice guidelines:</strong> Participants indicated that clear, concise and easy-to-understand guidelines are necessary to facilitate the adoption of clinical practice guidelines in the implementation settings. They encouraged the inclusion of clinical practice guidelines and/or information sheets in educational and patient information packages.</td>
</tr>
<tr>
<td><strong>Structures supporting guideline implementation:</strong> According to participants, existing systems may facilitate the implementation of these clinical practice guidelines in acute and rehabilitation settings. These include the following: interprofessional teams, policies supporting evidence-based practice changes, expert clinics, and multidisciplinary processes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 3: What strategies do you feel will assist with the implementation of continence care guidelines for stroke survivors?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identify and capitalize upon practice champions:</strong> Participants stated the importance of identifying and capitalizing upon the expertise and advocacy of practice champions. These may be existing continence care champions within the health care system, or it may be possible to develop new champions through education and outreach.</td>
</tr>
<tr>
<td><strong>Implement educational program:</strong> Implementing a strong, multi-tiered educational program targeting nurses, other health professionals, stroke survivors, and caregivers was described as an important factor to effective implementation of CPGs. Participants noted that the availability of high-quality presentation materials and self-learning packages may enhance nurses' learning. Making educational materials available to stroke survivors and their caregivers increases awareness of post-stroke continence challenges and may encourage the adoption of guidelines by nurses.</td>
</tr>
<tr>
<td><strong>Implement practice changes incrementally:</strong> Participants indicated that incremental changes in practice might strengthen the adoption of guidelines insofar as they would be manageable by nurses and participating implementation sites.</td>
</tr>
</tbody>
</table>
Pilot Site Implementation Findings
Clinical staff nurses at each site selected the three recommendations from the CPGs for their pilot implementation.

The researchers developed learning strategies tailored to the needs of the pilot implementation sites. In the rehabilitation setting, education included 20-minute training sessions done five times on each recommendation—one recommendation per month. Additionally, the team used posters on the various types of incontinence in strategic areas of the unit. All nurses received pocket cards defining timed versus prompted voiding and a generic conversation script from the RNAO (2005) best practice guideline on promoting continence care. Unit educators highlighted the selected recommendations at a previously planned skills fair. Unit-based nurse experts encouraged staff to discuss patients’ urinary continence needs during the weekly interprofessional team rounds.

On the KAB surveys that evaluated nurses’ knowledge, attitudes, and beliefs regarding urinary continence challenges, nurses demonstrated some knowledge regarding urinary continence management at baseline (see Table 7), identifying a strong need for general and intervention-specific education. The implementation of the CPGs improved scores on the KAB surveys with knowledge scores improving 13.8 points and attitude scores improving 6.2 points.

The research assistant audited the pilot stroke survivor charts one week prior to the start of the implementation. The week following the end of the three-month implementation, the research assistant conducted the post-implementation chart audit. The rehabilitation unit experienced a decrease in the number of stroke survivors with urinary continence issues during the post-implementation week of chart audits. The implementation period was short (three months) to evaluate changes in clinical practices. Small sample sizes prevented statistical analysis. However, the chart audits provided descriptive data and suggested continence needs were identified and interventions were put in place both pre and post implementation. This preliminary data provided information to suggest an awareness of nurses of the continence needs and the need for interventions to address areas of concern. The pre and post chart audits demonstrated minimal change in the documentation of continence management. The majority of documented interventions noted both pre and post audit included the following: 1) toilet patient regularly Q2-3 hours, 2) push fluids, and 3) the use of continence management products such as pull-up briefs and pads.

Discussion
The literature review in urinary incontinence in stroke studies provided mostly Level III and IV evidence according to the RNAO levels of evidence. Expert opinion contributed to the development of the CPGs. Future research is needed to address the effectiveness of interventions in urinary continence in stroke populations.

The research team used information obtained from the expert panel to revise the evidence-based recommendations, Clinical Practice Guidelines for the Urinary Continence Management of Stroke Survivors in Acute and Rehabilitation Settings. The team also found this information valuable for developing key education strategies to support the implementation of the clinical practice guidelines at the pilot implementation sites. The researchers developed presentations that: a) dispelled urinary continence management myths; b) identified types of urinary incontinence; and c) could be delivered with limited resources. Development of an online self-learning portal also supported the implementation of the clinical practice guidelines (French and English versions of the clinical practice guidelines). All educational material was publicly available via the online self-learning portal.

This study did not have strong measures to assess the degree to which nurses implemented the selected recommendations. Clinical outcomes such as resolution of urinary incontinence, a reduction in the frequency of urinary incontinent episodes, and patient satisfaction with their continence management regimen would have informed the research team about effective implementation of the recommendations.

### Table 6: Guideline recommendations selected by pilot sites

<table>
<thead>
<tr>
<th>Rehabilitation Unit</th>
<th>Acute and Rehabilitation Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3 “Assess contributing factors to continence management challenges that may occur due to stroke using data from validated assessment tools.”</td>
<td>#1 “Assessment of stroke survivor’s continence history. Identify pre-existing and emergent comorbidities and transient causes that may contribute to urinary incontinence and/or urinary retention.”</td>
</tr>
<tr>
<td>#9 “Assess the type and severity of the stroke survivor’s urinary incontinence using a validated assessment tool.”</td>
<td>#2 “Conduct a baseline assessment of post void residual volumes and voiding patterns.”</td>
</tr>
<tr>
<td>#11 “Initiate an individualized timed voiding schedule for stroke survivors.”</td>
<td>#11 “Initiate an individualized timed voiding schedule for stroke survivors.”</td>
</tr>
</tbody>
</table>

### Table 7: Changes in KAB scores at two pilot sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Knowledge</th>
<th>Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-pilot implementation n=42</td>
<td>51.8%</td>
<td>72.9%</td>
</tr>
<tr>
<td>Post-pilot implementation n= 20</td>
<td>65.6%</td>
<td>79.1%</td>
</tr>
<tr>
<td>Change</td>
<td>+13.8</td>
<td>+6.2</td>
</tr>
</tbody>
</table>
The research team identified several possible reasons to explain why the chart audits did not measure the uptake of the recommendations. The audit tool may have been too broad in its scope and not specific enough to capture implementation of the three recommendations piloted at each site. The format of the medical record at each clinical unit did not foster documentation of the specific elements of the selected recommendations.

Other factors that may have negatively impacted the pilot implementation were the turnover of staff involved with the implementation, competing corporate demands, and time pressures from increasing workload responsibilities. Other researchers involved in the development and evaluation of nursing clinical guidelines (Gifford, Davies, Edwards, & Graham, 2006; Ploeg, Davies, Edwards, Gifford, & Elliott-Miller, 2007; Francke, Smit, de Veer, & Mistiaen, 2008) have reported similar barriers to evidence-based guidelines uptake. This finding reflects the reality of work experiences in many clinical practice settings. The demands on clinical nurses to implement evidence-based practice are high.

Limitations and strengths

Our study had several limitations. The Knowledge, Beliefs and Attitudes survey tool from the Ontario IC5 Collaborative Project that the researchers used to gather information from frontline clinicians had not undergone widespread validation testing. Therefore, the interpretation of the survey scores would have been stronger if associated with other evidence. The study team asked participants, as a group, to come to consensus about the most appropriate CPGs recommendations for implementation in their practice setting. The selection of recommendations could possibly have been prejudiced by one or more informal leaders and not truly representative of the group’s opinion. The sample size for the pilot implementation was only two inpatient units, each with less than 30 beds, reducing generalizability to other inpatient rehabilitation facilities. Even with these limitations, the study provided preliminary exploration of the challenges for urinary continence CPGs for this patient population.

A key strength of the study was the inclusion of stroke survivors in the development of the CPGs. These individuals provided a unique lived experience to discussions about priorities and the proposed draft CPGs. Engaging an expert panel contributed to the development of the guidelines and supported the implementation with information about barriers and facilitators. Nurses were provided with tools and resources to improve continence management of their patients.

Conclusion

This study contributed to the body of knowledge on the management of urinary continence of stroke survivors by developing evidence-based recommendations and piloting selected recommendations. Preliminary study findings demonstrated an uptake of the evidence-based recommendations. A larger study is required to determine the applicability of all the recommendations in the CPG. Additional research is needed to evaluate the sustainability of nurses’ knowledge and to determine the impact of the CPGs on clinical outcomes. This research team has subsequently conducted an evaluation of the online self-learning portal in partnership with national and international nursing organizations. This study suggested that the implementation of the guidelines improved nurses’ knowledge of the continence needs of stroke survivors.

REFERENCES


APPENDIX A: Clinical Practice Guidelines for the Urinary Continence Care of Stroke Survivors in Acute and Rehabilitation Settings Summary of Recommendations

URINARY CONTINENCE MANAGEMENT OF STROKE SURVIVORS
Assessment Recommendations

1. Assess stroke survivor’s continence history. Identify pre-existing and emergent comorbidities and transient causes that may contribute to urinary incontinence and/or urinary retention.

**Level of Evidence** IV, IIb

2. Obtain a baseline assessment of three post-void residual volumes and voiding patterns (i.e., amount voided and amount of urine scanned in bladder).

**Level of Evidence** IIb, III, IV

3. Assess contributing factors to continence management challenges that may occur due to stroke using data from validated assessment tools. These include changes in medications, nutrition, dietary practices, mobility, cognitive status, and ability to communicate.

**Level of Evidence** Ia, III, IV

4. Discuss stroke survivor’s knowledge, beliefs, goals and cultural attitudes toward urinary continence management.

**Level of Evidence** IV

5. Assess stroke survivors for the presence of urinary tract infections.

**Level of Evidence** III

6. Assess stroke survivors for constipation by obtaining information about stool frequency, character and consistency of bowel movements and fluid intake.

**Level of Evidence** Ia

7. Identify environmental barriers to successful toileting.

**Level of Evidence** IV

8. If urinary incontinence is detected, identify the type experienced by the stroke survivor and develop an appropriate management plan.

**Level of Evidence** III, IV

Intervention Recommendations: Urinary Incontinence

9. Assess the type and severity of the stroke survivor’s urinary incontinence using a validated assessment tool.

**Level of Evidence** IV

10. Initiate an individualized prompted voiding schedule based on stroke survivor’s needs, as determined by a three-day voiding record.

**Level of Evidence** Ia, IV

11. Initiate an individualized timed voiding schedule for stroke survivors.

**Level of Evidence** IV

12. Promote stroke survivors’ dignity by using continence management products, such as pads and pull-ups, to manage incontinence. Product selection is dependent on the type of incontinence and amount of urine lost.

**Level of Evidence** Ia, IV
### Intervention Recommendations: Urinary Retention

<table>
<thead>
<tr>
<th>13. Ensure optimal patient positioning to promote voiding, taking into account the stroke survivor’s preferences and impairments.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>14. Establish an appropriate intermittent catheterization plan of care for the management of urinary retention using a voiding record and monitoring intake and output of fluids.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>Ia, Ib, IV</td>
</tr>
<tr>
<td>15. Use the smallest catheter size available to minimize the discomfort and risk of injury associated with catheterization.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
</tbody>
</table>

### General Interventions

<table>
<thead>
<tr>
<th>16. Implement a bowel protocol to ensure proper management, if the stroke survivor is experiencing constipation, and encourage stroke survivors to have healthy intake levels of at least 1,500 to 2000 ml/day of fluid when medically appropriate. Minimize the intake of caffeine, alcohol, and other bladder irritants.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IIa</td>
</tr>
<tr>
<td>17. Consult with the medical team to determine if a more detailed evaluation of lower urinary tract function is needed if urinary retention and/or incontinence persist.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>18. Promote privacy for stroke survivors while toileting.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
</tbody>
</table>

### Education Recommendations: Health Professionals

<table>
<thead>
<tr>
<th>19. Nurse educators will conduct educational sessions with health professionals outlining types of incontinence, their respective treatments and the association between stroke and urinary continence management. Self-learning materials will be made available to augment educational sessions and provide those unable to participate with information regarding urinary continence management of stroke survivors.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>20. Provide stroke survivors and their caregivers with information regarding urinary retention, urinary incontinence and urinary continence management options.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
</tbody>
</table>

### Organizational & Policy Recommendations

<table>
<thead>
<tr>
<th>21. Ensure that the organization has the planning, resources and administrative support needed to implement these evidence-based practice guidelines.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>22. Establish an inter-professional team approach for the urinary continence care of stroke survivors.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>23. Ensure continuity of care for stroke survivors between acute, rehabilitation, and complex continuing care settings by documenting management strategies and outcomes.</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Evidence</strong></td>
<td>IV</td>
</tr>
<tr>
<td>Author, Year</td>
<td>Topic</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>Borrie et al. (2001)</td>
<td>Risk factors for urinary retention (UR) to determine prevalence and assess validity of use of bladder scanner to measure post void residual (PVR) urine volumes</td>
</tr>
<tr>
<td>Dromerick &amp; Edwards (2003)</td>
<td>Relation of PVR to urinary tract infection (UTI)</td>
</tr>
<tr>
<td>Fernandez &amp; Griffiths (2006)</td>
<td>Effects of duration of short-term (1–14 days) indwelling catheters</td>
</tr>
<tr>
<td>Garrett et al. (1989)</td>
<td>Bladder emptying assessment</td>
</tr>
<tr>
<td>Study</td>
<td>Topic</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>Griffiths &amp; Fernandez (2007)</td>
<td>Strategies for the removal of catheters from patients with a short-term indwelling urethral catheters</td>
</tr>
<tr>
<td>Gross &amp; et al. (2007)</td>
<td>Effect of time of day for urinary catheter removal on voiding behaviours</td>
</tr>
<tr>
<td>Kong, K.H. &amp; Young, S. (2000)</td>
<td>Incidence and outcome of post-stroke UR</td>
</tr>
<tr>
<td>Niel-Weise &amp; van den Broek (2007)</td>
<td>Determine the advantages and disadvantages of alternative approaches to catheterisation for short-term bladder drainage in adults</td>
</tr>
<tr>
<td>Wu &amp; Baguley (2005)</td>
<td>Prevalence, risk factors and outcomes of UR</td>
</tr>
</tbody>
</table>
### APPENDIX C. Summary of Key Research Papers for Urinary Incontinence

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Topic</th>
<th>Population</th>
<th>Design</th>
<th>Sample Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrie et al. (2002)</td>
<td>Interventions led by specialized nurses with training in managing incontinence</td>
<td>Patient who were 26 years of age or older and suffered from UI in an outpatient clinic</td>
<td>Randomized controlled trial; men and women were randomly allocated to receive either counselling from specialized nurses to manage UI using behavioural and lifestyle modification sessions every four weeks for 25 weeks or usual care</td>
<td>421 subjects were randomized to the treatment (n=210) and control (n=211) groups</td>
<td>Behavioural and lifestyle counselling provided by specialized nurses with training in managing incontinence resulted in a statistically and clinically significant improvement in the treatment group at 25 weeks, with a reduction in incontinent events and pad use.</td>
</tr>
<tr>
<td>DuBeau, C. et al. (2006)</td>
<td>Determine whether nursing home residents with UI have worse quality of life than continent residents</td>
<td>Older nursing home residents</td>
<td>Retrospective cohort study using a Minimum Data Set database to determine cross-sectional and longitudinal (six-month) association between UI and quality of life</td>
<td>Of 133,111 eligible residents, 90,538 had consistent continence status, 58,850 (65%) were incontinent</td>
<td>UI was significantly associated with worse quality of life in residents with moderate cognitive and functional impairment. New or worsening UI over six months was associated with worse quality of life (OR= 1.46, 95% confidence interval=1.36-1.57) and was second only to cognitive decline and functional decline in predicting worse quality of life. These results demonstrate the need to improve continence care and quality in nursing homes.</td>
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<tr>
<td>Dumoulin et al. 2005</td>
<td>A comprehensive review of the literature to assess the scientific evidence for the effectiveness of behavioural therapies to treat UI post stroke</td>
<td>In adult stroke population is a behavioural intervention more effective than no intervention or placebo/alternative intervention in the management of UI? In adult stroke population is a combination of behavioural interventions more effective than no intervention or placebo/alternative intervention in the management of UI?</td>
<td>A systematic review</td>
<td>Four RCT, one cohort, eight major stroke CPGS and two major UI CPGS</td>
<td>Most international stroke guidelines do not report specific comments to manage UI. Evidence for the treatment of UI remains extremely limited.</td>
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<tr>
<td>Eustice et al. (2007)</td>
<td>Assess the effects of prompted voiding; a behavioural therapy to improve bladder control for people using verbal prompts and positive reinforcement</td>
<td>UI in adults, with and without cognitive impairment</td>
<td>A systematic review</td>
<td>Nine trials, 674 elderly people, the majority were women; randomized or quasi randomized trial of prompted voiding for management of UI</td>
<td>Prompted voiding is a behavioural therapy used to improve bladder control for people with or without dementia using verbal prompts and positive reinforcement. The limited evidence suggested that prompted voiding increased self-initiated voiding and decreased incontinent episodes in the short-term. There was no evidence about whether these effects are sustained over a long period of prompted voiding or persist after stopping prompted voiding. No stroke specific studies.</td>
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<tr>
<td>Fader et al. (2007)</td>
<td>Assess the effectiveness of different types of absorbent product designs for women with light urinary incontinence</td>
<td>Women with light UI who used absorbent products (disposable insert pads, menstrual pads, washable pants with integral pad, washable insert pads) suitable for light incontinence</td>
<td>A systematic review</td>
<td>One trial, 85 women, which compared different designs of the products; randomized cross-over design</td>
<td>Disposable insert pads are more effective for leakage prevention than the other designs; because they are most expensive, providing choice of designs (or combination of designs) is likely to be cost-effective. There is no clear benefit for skin health using either washable or disposable design. No stroke specific studies.</td>
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<tr>
<td>Harari et al. (2004)</td>
<td>Constipation and fecal incontinence</td>
<td>Stroke patients were identified by screening questionnaire</td>
<td>Randomized controlled trial</td>
<td>122 stroke patients in community and 24 stroke rehabilitation inpatients</td>
<td>A clinical/educational nurse intervention effectively improved symptoms of bowel dysfunction up to six months later, changed bowel-modifying lifestyle behaviours up to 12 months later, and influenced patient-GP interactions and physician prescribing patterns. The intervention included an assessment by a nurse leading to: (1) targeted patient and carer education; (2) provision of booklet; and (3) diagnostic summary and treatment recommendations sent to the patient's general practitioner, and ward physician if in hospital.</td>
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<td>Hay-Smith et al. (2007)</td>
<td>Assess the effectiveness of physical therapies in preventing incontinence in adults</td>
<td>Incontinence in adults</td>
<td>A systematic review</td>
<td>Two trials in men (155) and 13 trials in women (4661); randomized or quasi randomized trials</td>
<td>There is insufficient evidence to determine whether physical therapies can prevent UI in childbearing women or men following prostate surgery. No stroke specific studies.</td>
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<tr>
<td>Ostaszkiewicz, J. et al. (2007)</td>
<td>To assess the effects of habit retraining for the management of UI</td>
<td>Adults</td>
<td>A systematic review</td>
<td>Three trials with 337 participants</td>
<td>Habit retraining involves identifying an incontinence person's toileting pattern and the development of an individualized toileting schedule to pre-empt involuntary bladder emptying. The review found there is not enough evidence from trials on which to judge the impact of habit retraining on UI.</td>
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<tr>
<td>Study</td>
<td>Objective</td>
<td>Population</td>
<td>Study Design</td>
<td>Findings</td>
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<td>Ostaszkiewicz et al. (2007)</td>
<td>To assess the effects of timed voiding (fixed time interval assistance program) for the management of urinary incontinence in adults who cannot participate in independent toileting</td>
<td>Adult population with an alteration in continence status as a primary outcome</td>
<td>A systematic review</td>
<td>Two trials with 298 participants in aged care homes and had reduced cognition and impaired mobility. Timed voiding is characterized by a fixed time interval between toileting and aimed at people with or without cognitive impairment. The fixed schedule of toileting was combined with other interventions. Reductions in the number of incontinence episodes were reported in each trial. Insufficient evidence on the effects of time voiding for the management of UI.</td>
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<td>Roe et al. (2006)</td>
<td>A synopsis of findings on theory and methods using metastudy techniques</td>
<td>Comparison of four Cochrane systematic reviews on bladder training and voiding programmes for the management of UI using metastudy descriptive techniques</td>
<td>A synopsis of four Cochrane systematic reviews on behavioural interventions, including bladder training and voiding programmes, for the management of UI in adults.</td>
<td>Four Cochrane systematic reviews: bladder training, prompted voiding, habit retraining and timed voiding.</td>
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<td>Thomas et al. (2005)</td>
<td>To determine the optimal methods for prevention and treatment of UI</td>
<td>Adult population with stroke</td>
<td>A systematic review</td>
<td>Seven trials with 399 participants; no two trials addressed the same comparison. There was suggestive evidence that specialist professional input through structured assessment and management of care and specialist continence nursing may reduce urinary incontinence after stroke. Data from trials of physical, behavioural, complementary and anticholinergic drug interventions are insufficient to guide continence care of adults after stroke.</td>
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<tr>
<td>Wallace et al. (2004)</td>
<td>To assess the effects of bladder training for the treatment of UI</td>
<td>Adults</td>
<td>A systematic review</td>
<td>Three trials including 159 women compared. The purpose of bladder training is to restore normal voiding patterns by progressively lengthening the interval between voids. The limited evidence suggests that bladder training may be helpful for the treatment of UI. The trials were of variable quality and small sample size.</td>
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Clustered stroke patients on a general medical unit: What nursing skills and knowledge contribute to optimal patient outcomes?

By Brenda Clayton, Athabasca University

Abstract

The purpose of this paper is to explore the nurse’s role in caring for adult stroke patients, both ischemic and hemorrhagic, who are clustered on general medical units. There is evidence in the literature that having patients cared for in a dedicated stroke unit improves patient outcomes by decreasing disability and mortality rates for stroke survivors. However, having a dedicated stroke unit may not be practical or feasible because of the population distribution, particularly for smaller urban and rural communities. Therefore, training nurses on the general medical units to provide care to clustered stroke patients requires specific skill training. This will decrease hospital stays and improve patient outcomes, as a result of specialized trained health care workers. A review of the literature indicates that there are specific skills and knowledge the nurse requires to perform evidence-based best practice therapy and have optimal patient outcomes when caring for patients on general medical units.

Key words: organized stroke units, nursing care, acute stroke care, clustered stroke care

Methodology

Published literature on the topic of stroke and nursing care for adult stroke patients while on an acute care unit was compiled. Two search strategies were used. The first approach involved using the following search terms, “organized stroke units”, “nursing care”, and “acute stroke care”, by accessing academic databases such as CINAHL, MEDLINE, Cochrane Library and ProQuest Nursing & Allied Health for articles. The second strategy involved reviewing the reference lists of key Canadian

Résumé

Le présent document a pour but d’examiner le rôle de l’infirmière ou de l’infirmier dans les soins aux patients adultes atteints d’un AVC ischémique ou hémorragique qu’on a regroupés dans des unités de médecine générale. La documentation prouve que soigner les patients dans des unités spécialisées dans les soins de l’AVC améliore les résultats des patients, car cela réduit les taux d’invalidité et de mortalité chez les victimes d’AVC. Cependant, il n’est pas toujours pratique ou possible de posséder une telle unité du fait de la répartition de la population, en particulier pour les collectivités urbaines ou rurales plus petites. Il est donc nécessaire de donner une formation professionnelle spécifique aux infirmiers et infirmières de ces unités de médecine générale afin de soigner les groupes de victimes d’AVC. La présence de fournisseurs de soins de santé ayant reçu une formation spécifique réduira la durée du séjour à l’hôpital des patients et améliorera leur état de santé. Une étude de la documentation révèle que les infirmières et infirmiers doivent avoir acquis des aptitudes et des connaissances particulières afin de fournir des traitements optimaux qui soient fondés sur des données probantes, et ainsi obtenir les meilleurs résultats possible chez les patients hospitalisés dans des unités de médecine générale.

Mots-clés : unités d’AVC organisées, soins infirmiers, soins de l’AVC aigu, soins de l’AVC regroupés

Stroke is the number one cause of adult disability in North America (Canadian Stroke Network, 2011; Green & King, 2011; Justice, Howe, Dyches, & Hefferon, 2008) and the third leading cause of disability in the developed world (Stroke Unit Trialists’ Collaboration, 2013; Struwe et al., 2013). Stroke is a multifaceted disease and involves the skills, efforts and knowledge from a coordinated interdisciplinary team in treating the stroke patient (Kalra & Langhorne, 2007; Summers et al., 2009). There is evidence in the literature that having patients cared for in a dedicated stroke unit improves patient outcomes by decreasing disability and mortality rates for stroke survivors (Saposnik et al., 2011). Unfortunately, the percentage of patients who spend any time on a stroke unit after being admitted with a stroke is low, only 53%, which is undesirable in terms of optimal outcomes (Heart & Stroke Foundation, 2014).

While it is not feasible to have a dedicated stroke unit in every community, how can these patients be best cared for at smaller urban and rural centres with lower stroke admission rates? According to the Heart and Stroke Foundation: Canadian

Stroke Best Practice Recommendations (2014), having four patients in the facility at any one time defines clustered patients on a general medical unit. What is not clear is the expertise necessary for acute care nurses located in these smaller centres to provide best practice for optimal patient outcomes. Therefore, the purpose of this paper is to determine and explain what acute nursing knowledge and skills are required to achieve optimal patient outcomes for adult stroke patients, both ischemic and hemorrhagic, clustered on a general medical unit.

Methodology

Published literature on the topic of stroke and nursing care for adult stroke patients while on an acute care unit was compiled. Two search strategies were used. The first approach involved using the following search terms, “organized stroke units”, “nursing care”, and “acute stroke care”, by accessing academic databases such as CINAHL, MEDLINE, Cochrane Library and ProQuest Nursing & Allied Health for articles. The second strategy involved reviewing the reference lists of key Canadian

The first step was to review the title of the article and then the abstract. If deemed relevant for the purpose of this paper the full text was reviewed. Criteria for inclusion in this paper was that the articles were peer reviewed, published after 2004, and contained information on nursing care beneficial to acute stroke patients. This process generated more than 75 articles of which 47 documents were deemed relevant. These articles were utilized for the paper.

**Review of the literature**

Organized stroke units are recommended for caring for stroke patients (Stroke Unit Trialists’ Collaboration, 2013). Admission to a stroke unit significantly contributes to reducing the social and economic aspects of the burden of stroke (Di Carlo et al., 2011). A dedicated stroke unit is a unit where only acute stroke patients are admitted and treated (Lindsay et al., 2005). The necessary acute care nursing skills and practices that are required to produce optimal patient outcomes in caring for acute stroke patients was identified in the literature review. Clustering stroke patients alone does not translate into improved patient outcomes; instead it is the ability to apply the nursing skills and knowledge in a timely manner that leads to favourable patient outcomes (HSF, 2014). The Stroke Unit Trialists’ Collaboration (2013) identified important components of organized inpatient stroke units (p. 8). These include a coordinated interdisciplinary rehabilitation team, (comprising nursing staff, physiotherapist, occupational therapist, speech language pathologist [SLP], registered dietitian [RD], pharmacist, recreation therapist, social worker and chaplain), neurologist or specialist on staff, involvement of the caregivers, and a regular education program for the nursing staff are also key (Stroke Unit Trialists’ Collaboration, 2013).

Hyperacute care for the stroke patient predominantly involves the emergency medical services (EMS) and the care delivered in the emergency departments (ED) where blood work and a CT scan are performed. Here the etiology of the stroke is determined, and treatment initiated in the first few hours of a stroke (HSF, 2014). Acute care focuses on continuing to stabilize the patient; preventing deterioration and medical complications during the following days. Topics and information presented below have been identified as best practice in the acute nursing care of clustered stroke patients (Summers et al., 2009). In particular, education for nurses is crucial, as their nursing practice reflects their knowledge and skill sets in all of the following areas (Stroke Unit Trialists’ Collaboration, 2013).

**Telestroke**

Patients who have suffered a suspected stroke require an examination from a specialist, preferably a neurologist (HSF, 2014). Telestroke (Telehealth) improves access to best care. It is an excellent method for connecting with a Stroke Neurologist from a comprehensive stroke centre who can expedite treatment for patients (Jeerakathil et al., 2012; Rudd, 2011). Telestroke allows the physician to visualize and examine the patient remotely from a larger stroke centre (Rudd, 2011).

**Stroke order sets**

Physician stroke order sets are specific standing orders that direct care for the patient and address lab work, diagnostic imaging tests, cardiac tests and other items related to stroke and assessment of the patient’s condition. Examples include monitoring of blood pressure (BP), level of consciousness (LOC) changes, nutrition and swallowing, and standing orders for certain medications (Summers et al., 2009). Stroke order sets guidelines were published by Heart & Stroke Foundation: Canadian Stroke Best Practice Recommendations (2014) and reflect evidence-based best practice research for neurologists to consider when developing their own institutions stroke order sets.

**Clinical pathways**

Clinical pathways contain evidence-based recommendations for plan of daily care (Struwe et al., 2013). They are used to guide the nursing team in managing stroke patients and coordinating the care, discharge planning, lab work and DI tests (Summers et al., 2009). Use of these pathways results in a decrease in hospital costs, decrease in readmission rates, reduction in the length of stay (LOS), and enhanced usefulness of outcome measurement and quality improvement (Summers et al., 2009, p. 2922). Green et al. (2011) found that “nurses play a key role in the implementation of evidence-based recommendations” (p. 15) and clinical pathways ensure the recommendations are followed daily.

**Nursing care**

Nurses monitor the patients on an ongoing basis: 24 hours, seven days a week, and observe and report any variations in the physiological and psychological status of the patient (Senevirate, Mather, & Then, 2009). Nurses need to undergo specialized training in order to develop communication skills that enable them to effectively converse with the patient who has aphasia. Nursing feedback helps support decisions made regarding management and treatment (Cowey, 2012). Assessments listed below were identified in the literature as knowledge and skills that nurses require to care for the acute adult stroke patient (Summers et al., 2009). By developing expertise in acute stroke practice, the nurse can help to minimize or even prevent many complications that may arise (Lindsay et al., 2008).

**Neurological assessment**

**Knowledge.** Detecting changes (even subtle differences) in neurological status is vital to understanding, managing and recognizing alterations in neurological function, as well as predicting outcomes in patients who have experienced a stroke. Ongoing neurological vital signs, head-to-toe assessment, and effective use of the tools to determine the neurological status are important. The neurological assessment includes assessing the level of consciousness (LOC) and cognitive status (arousal, alertness and orientation) using the Glasgow Coma Scale (GCS) and by applying the National Institute of Health Stroke Scale (NIHSS) to determine stroke severity (NIHSS, 2014; Niemi, McErlane, & Tillett, 2013).
The GCS, which has “three components: eye opening, verbal response and motor response”, is widely used to assess and record the LOC in patients (McNutt, 2007, p. 69). The GCS is a reliable predictor of outcomes in head injured patients, including those who experience an acute stroke, when combined with the patient age and pupillary response (McNutt, 2007). Cerebral edema, mass effect and seizures are some of the complications screened for by observing the patient and taking the vital signs and GCS on a frequent basis (Hickey, 2009). Level of consciousness is the first change noted if a patient is deteriorating. By recognizing this variation in LOC early, the nurse can notify the physician and the change can be addressed (Hickey, 2009). Performing a head-to-toe neurological assessment at the beginning of each shift and at frequent intervals during the shift allows the nurse to gauge any alterations in neurological status (Hickey, 2009). The NIHSS provides the nurse with a “snapshot” of how the patient is faring at that particular moment in time and allows for ongoing evaluation of progress (Jauch et al., 2013; Gocan & Fisher, 2008). The NIHSS tests a number of the cranial nerves and permits the nurse to identify where some of the difficulties originate (Hickey, 2009).

**Skill.** GCS is performed in conjunction with vital signs and neurological assessment at least four hours in the initial acute care phase (HSF, 2014). It is imperative that all nurses working with acute stroke patients have their certification in the NIHSS (NIHSS, 2014). The NIHSS is performed on the days deemed important by the stroke orders, or as needed by the nurse (HSF, 2014). Monitoring for any kind of seizure activity is necessary, as seizures are only treated if observed (APSS, 2010).

**Blood pressure (BP) assessment and management**

**Knowledge.** Hypertension is the most important modifiable risk factor for primary and secondary stroke prevention (Lindsay, 2008, p. 58). The use of anti-hypertensive agents and education on lifestyle modifications are recommended to decrease the risk of another stroke (Lindsay, 2008). Hypertension is often observed during and following an acute stroke, normalizing within a few days (Weiss et al., 2013). Continued hypertension may be attributed to an increasing intracranial pressure (ICP), pain, full urinary bladder, hypoxia, pre-existing hypertension and cerebral hemorrhage (Hickey, 2009; Summers et al., 2009).

In the initial 24-hour period, BP reduction management in ischemic strokes is required for BP greater than 220/120 mmHg (Jauch et al., 2013) while guidelines for intracerebral hemorrhagic strokes are to maintain the systolic BP less than 180 mmHg (Qureshi, 2013). It is important to note that there is a risk of increasing cerebral ischemia when the BP is lowered excessively or too rapidly in the acute phase, as decreased blood flow to at-risk cerebral tissue occurs (Jauch et al., 2013). The brain has already been compromised by the stroke, therefore the BP has to be lowered cautiously (<15%-25%) (Summers et al., 2009). After the acute phase, target blood pressure parameters aim to keep the blood pressure lower than 140/90 mmHg for non-diabetic individuals and 130/80 mmHg for patients with diabetes (HSF, 2014).

**Skill.** Measuring BP at least every four hours in the initial phase (48 hours) identifies any hypertensive episodes that may need to be treated (HSF, 2014). Knowledge about BP guides the nurse in identifying potential problems.

**Temperature assessment and management**

**Knowledge.** “Hyperthermia (temperature greater than 37.5°C) is associated with poorer outcomes and is associated with more severe neuronal injury” (Hickey, 2009, p. 603). Aggressive treatment of an elevated temperature is essential, as neurological deterioration can occur (Hickey, 2009). A combination of increased ICP and cerebral ischemia can result from a decreased oxygen (O₂) supply, as a direct effect of hyperthermia (Hickey, 2009). Shivering, which can accompany fever, may also cause increased ICP and should be prevented whenever possible (Hickey, 2009). Searching for a cause of the fever is recommended (Lindsay et al., 2008).

**Skill.** Frequent monitoring of temperature (every four hours for the first 48 hours) and as needed (prn) in the post stroke phase is vital (Lindsay et al., 2008). Treating the elevated temperature with antipyretics (eg. acetaminophen [Tylenol]) and mechanical measures such as tepid sponge, light bed linen and/or clothing and antimicrobial therapy (as required) may be necessary to lower the temperature (Lindsay et al., 2008; Jauch et al., 2013).

**Respiratory management**

**Knowledge.** Ensuring patency of the airway and adequate oxygenation of the patient, following acute stroke, is critical to prevent hypoxia and further neurological injury to the cerebral tissue (Hickey, 2009). Hypoxia is defined as oxygen saturation levels “less than 96% for greater than five minutes within the first 48 hours of a stroke” (Jauch et al., 2013, p. 888). Changing position of the patient at least every two hours helps prevent pooling of the secretions in the lungs on the dependent side, which potentially leads to a hypostatic pneumonia (Hickey, 2009). An increase in oxygen needs (as evidenced by low oxygen saturation levels) indicates an adverse change in respiratory function (Hickey, 2009).

**Skill.** The respiratory assessment includes: observing the respiratory rate, taking the oxygen saturation levels with pulse oximetry, administering oxygen to maintain optimal oxygen saturation levels, (88-92% for patients with COPD [Austin et al., 2010] and greater than 94% for hypoxemic individuals [Jauch et al., 2013; HSF, 2014]), performing auscultation of the lung fields and reporting any abnormalities heard (Hickey, 2009).

**Swallow screen**

**Knowledge.** Dysphagia is a major concern for the stroke patient and is present in more than half of stroke patients (Martino et al., 2008). Martino et al. (2008) devised the swallow screen, Toronto Bedside Swallowing Screening Test (TOR BSST), which is sensitive, simple, highly predictable and reliable in detecting dysphagia in stroke patients (p. 559). The stroke patient should be referred to an RD within 48 hours of admission to ensure nutrition and fluid needs are ordered. Different textures may be ordered depending on the assessment from the SLP (Lindsay et al., 2008).

If the patient fails the TOR BSST or swallow screen and can have nothing by mouth (NPO), then meticulous oral care using a suction toothbrush should occur every two to four hours. This frequent oral care decreases the risk of aspiration pneumonia in patients with dysphagia. When the secretions are not
allowed to accumulate in the oral pharyngeal area, the bacteria cannot collect and inadvertently enter the trachea and subsequent lungs.

**Skill.** All nurses working on a clustered stroke unit should be certified in performing the TOR BSST. The TOR BSST should be performed within 24 hours of admission (HSF, 2014) so any swallowing difficulties that might lead to complications can be detected early (Jeerakathil et al., 2012). Frequent oral care using suction toothbrushes is required on all patients, but most meticulously on those patients that are NPO (HSF, 2014).

**Hydration and nutrition**

**Knowledge.** Hydration and nutrition are both important for recovery (Summers et al., 2009). If the patient is kept NPO because it is unsafe for the patient to eat or drink, then an intravenous (IV) infusion of normal saline is recommended to help maintain hydration (Summers et al., 2009; Jauch et al., 2013). If a patient becomes dehydrated or hypovolemic, there is the potential for hypotension to occur and the brain to receive decreased blood flow and potentially exacerbate cerebral ischemia (Summers et al., 2009). At some point during the first few days, enteral feeds must be initiated as a strategy to meet nutritional and recovery needs in patients who are NPO (Lindsay et al., 2008). If the patient has a continued inability to swallow safely, then a tube may be inserted into the stomach for longer term feeding (Jauch et al., 2013).

**Skill.** Maintaining an IV is vital for the infusion of normal saline to maintain adequate hydration. If the patient is unable to swallow during the first few days, a nasogastric feeding tube is inserted. The patient requires nutrients if they are going to heal. The RD is responsible for calculating the nutritional needs of the patient. The appropriate enteral feeding formula is chosen and monitored by the nurses and RD (Lindsay et al., 2008).

**Blood glucose assessment**

**Knowledge.** Diabetes mellitus is a major risk factor for stroke and up to one third of all stroke patients admitted to hospital have diabetes mellitus (Laird, 2014). The acceptable blood glucose parameters for a patient with hyperglycemia are levels between 7 mmol/L and 10 mmol/L (Jauch et al., 2013). Hyperglycemia is also associated with increased risk of hemorrhagic transformation (hemorrhage after t-PA or ischemic stroke), as well as a risk of a future stroke (Laird, 2014). Hyperglycemia is associated with the stress response, inflammatory response and any pre-existing glucose abnormality (Jauch et al., 2013). Administering glucose solutions is contraindicated in this patient population, as high blood glucose levels have a detrimental effect on neural tissue following an acute brain injury (Summers et al., 2009; Jauch et al., 2013). Similarly, hypoglycemia is undesirable, as it mimics stroke-like symptomology (Summers et al., 2009). Measuring the patient’s hemoglobin A1C (HbA1C) may help gauge blood glucose abnormalities occurring in the three months prior to the stroke.

**Skill.** All patients admitted with a suspected stroke should have their blood glucose checked immediately (Lindsay et al., 2008). Hypoglycemic and hyperglycemic episodes should be avoided. As a result, frequent blood glucose monitoring is necessary (Allport et al., 2006; Summers et al., 2009). Any hypoglycemic or hyperglycemic episodes should be treated (Lindsay et al., 2008).

**Lipid management**

**Knowledge.** Fasting serum lipid levels should be measured on all patients who experience stroke (HSF, 2014). High cholesterol levels lead to plaque build-up in the arteries (atherosclerosis), which causes narrowing of the artery lumen and leads to elevated BP (Anderson et al., 2013). To maintain the LDL cholesterol level below 2.0 mmol/L (the recommended level) many patients require a lipid lowering medication, usually a statin (HSF, 2014). The RD also educates the patient on dietary changes that could be helpful in decreasing sources of ingested cholesterol.

**Skill.** The nurse needs to ensure a proper fasting lipid test occurs and that the patient receives the appropriate teaching about the lipid lowering medication and its potential side effects.

**Language and speech**

**Knowledge.** Nurses need to develop effective expertise and communication skills to assess the patient’s ability to communicate. This is especially significant when the patient has suffered a left hemispheric stroke, as the major language centres are located in the left frontal (Broca’s area) and left temporal (Wernicke’s area) lobes (Hickey, 2009). The type of aphasia can vary from being specific to more global, depending how much brain tissue is involved. Broca’s aphasia is when the person has problems converting thoughts into meaningful language (expressive aphasia), while an individual with Wernicke’s aphasia has impaired comprehension of the language (receptive aphasia) and can pronounce the words, but they usually make no sense (Hickey, 2009, p. 118). If the stroke is extensive, with a large portion of the brain being damaged, the person may suffer a global aphasia where both major language areas are affected (Hickey, 2009, p. 118). Apraxia and dysarthria are motor speech disorders characterized by disruptions or abnormalities of movement parameters (Duffy, 2008; Hickey, 2009).

**Skill.** Recognizing what area of the brain is involved and interacting with the patient allows the nurse to identify issues that the patient is having with the understanding, translation and expression of thoughts into speech. The clarity of the patient’s speech aids the nurse in the accuracy of her assessment. Collaborating with an SLP assists the nursing staff to reduce communication challenges: the use of gestures, augmentative communication devices and eye movements can aid the health care team in identifying the patient’s needs.

**Urinary continence care**

**Knowledge.** Establishing a baseline for urinary continence begins on admission by determining the patient’s urinary function prior to the stroke, including issues with dribbling, incontinence or difficulty starting their stream (Woodward, 2013a). Between 40% and 60% of all people admitted to hospital following a stroke experience urinary incontinence and 15% continue to experience incontinence at one year (Thomas et al., 2009; Woodward, 2013a, p. 31). The problem is either with the storage of urine (incontinence) or emptying of the bladder (retention) (Woodward, 2013a, Woodward, 2013b). If the patient is unable to void on their own, intermittent catheterization every six hours may be required to help stimulate normal physiological filling and emptying of the bladder (Summers et
al., 2009). The bladder scanner, a non-invasive handheld ultrasound device, is useful in determining the amount of urine in the bladder, both before voiding or post-void residuals (Lindsay, 2008). Nurses need to be taught how to properly use a bladder scanner. The use of indwelling catheters is discouraged, as they contribute to urinary tract infections (Lindsay, 2008; Summers et al., 2009).

Skill. To deal with these issues, patients can be taught pelvic floor exercises, and encouraged to participate in bladder training, either through prompted voiding or timed voiding (Woodward, 2013b). Pharmacological interventions are available if the bladder training and pelvic floor muscle exercises are not effective alone (Woodward, 2013b). Bladder scans and intermittent catheterizations are performed as indicated on the stroke order set if the patient is unable to void or has a high post-void residual (greater than 150 mL) (APSS, 2010; Lindsay et al., 2008; Woodward, 2013a).

Bowel care
Knowledge. Harari et al. (2004) studied constipation and fecal incontinence over the 12-month period following stroke; they found that encouraging daily pelvic floor exercises, the use of suppositories (instead of laxatives), bulking agents (rather than stool softeners to avoid anal leakage), increased fluid intake, and diet all contributed to improved bowel function. Constipation, which causes straining while having a bowel movement, results in increased intra-abdominal pressure and ICP and should be avoided (Hickey, 2009).

Skill. Identifying when the patient had their last bowel movement helps establish any problems. Use of a bowel routine for constipation or fecal incontinence is suggested for stroke patients (Lindsay, 2008). Incorporating this knowledge, when educating the patients and families, is necessary so that improved bowel function can return over time.

Visual and spatial neglect
Knowledge. Unilateral spatial neglect (USN) is a term used to describe the inability of the patient to respond, report or orient with any sensory modality to stimuli that is presented to the hemibody opposite to the side of the brain lesion (more often the right brain) (Menon-Nair et al., 2006). Menon-Nair et al. (2006) report that the incidence of USN is found in approximately 30% of all stroke patients. USN makes it difficult for the patient to focus on their needs in their personal space (e.g., combing hair), near extrapersonal space (within arms’ reach) and far extrapersonal neglect (beyond arms’ reach) (Menon-Nair et al., 2006).

Skill. Nurses could use a simple test to check for USN by using the comb and razor test to evaluate for personal space neglect (Stroke Engine, 2013). Other recommended tests are the single letter cancellation for near extrapersonal neglect, and the NIHSS for testing personal and near extrapersonal neglect (Menon-Nair, Korner-Bitensky & Ogourtsova, 2007; Stroke Engine, 2013). A member of the interdisciplinary team should test for USN on their initial assessment.

Cognitive assessment
Knowledge. All stroke patients with hypertension, hyperlipidemia, diabetes, and older than 65 years of age are at a high risk for cognitive and perceptual impairment (Lindsay et al., 2008). For every patient who exhibits stroke symptoms, there are up to nine people who have covert strokes that exhibit cognitive impairment (Bayley et al., 2008). Screening for cognitive impairment using validated assessment tools should be completed to investigate the cognitive status of the patient (Lindsay et al., 2008). Areas addressed include: “arousal, alertness, attention, orientation, memory, language, agnosia, problem-solving, planning, insight and judgement” (Lindsay et al., 2008, p. S17). Two tests utilized include: Montreal Cognitive Assessment (MoCA) and Mini-Mental Status Examination (MMSE) (Lindsay et al., 2008; Hickey, 2009).

Skill. An abbreviated bedside assessment can be done to evaluate the patient’s cognitive function (Hickey, 2009). Higher level deficits may be more difficult to detect, as the patient may have devised methods to compensate for any deficiencies (Hickey, 2009). Nursing staff can collaborate with other members of the interdisciplinary team to identify and implement strategies that assist the patient and their family members to manage any cognitive limitations.

Mobility
Knowledge. Regaining mobility is a vital part of the rehabilitation process following a stroke (Lindsay et al., 2008). Activities involving moving the patient in bed, transferring the patient from bed to chair, sitting in a chair and walking constitute mobilizing the patient (Lindsay et al., 2008). To decrease the complication of pneumonia, venous thromboembolism (VTE), pressure sores and dislocation of the shoulder, nursing care needs to focus on skin integrity, careful positioning and handling of the patient when turning and mobilizing, and pressure area risk evaluation (Ringelstein et al., 2013). Falls pose a considerable safety risk post stroke and it is every health care professional’s responsibility to assess the patient’s abilities and need for assistance to minimize this risk (Summers et al., 2009).

Skill. Safely mobilizing the patient as soon as possible for chair sitting and walking is crucial. Changing the patient’s position at least every two hours while they are in bed or in the chair decreases the chances of the patient developing pneumonia, pressure area or a VTE. Identifying the patients who are at risk for falling and using appropriate precautions, mobility aids and levels of assistance are part of the mobility assessment.

Venous thromboembolism (VTE) prophylaxis
Knowledge. Stroke patients are considered to be at high risk for developing a VTE because they are paralyzed on one side and may be immobile (Lindsay et al., 2008; Summers et al., 2009). To avoid deep vein thrombosis (DVT) and pulmonary embolism (PE), all patients should be mobilized as soon as possible, be adequately hydrated, and started on prophylactic subcutaneous (sc) anticoagulation medication, either low molecular weight heparin (acute ischemic strokes) or unfractionated heparin (renal failure) (HSF, 2014, section 4, p. 17; Lindsay et al., 2008). If the patient has experienced a hemorrhagic stroke, the physician needs to monitor the size of the bleed with additional CT scans; this ensures no stroke expansion after the patient has been started on heparin (HSF, 2014, section 4.2.2).
**Skill.** Daily assessments for deep vein thrombosis (DVT) occur along with sc heparin or low molecular weight heparin injections, as ordered. This is in addition to encouraging the patient to mobilize and adequately hydrate.

**Post stroke depression (PSD)**

**Knowledge.** Post stroke depression is a frequent and significant complication following a stroke, affecting both patients and families (HSF, 2014; de Man-van Ginkel et al., 2013). One third of all stroke patients exhibit depression at some point during their recovery period. Therefore, all patients should be screened during the first few days following a stroke and treated for PSD, if required (HSF, 2014, section 7.1). Patients with PSD are noted to have poorer functional recovery and cognitive function; they have decreased social participation and are at an increased risk for becoming dependent, rather than independent members of the community (HSF, 2014). Families and caregivers of stroke patients are also at risk for depression and as many as 30% to 60% of caregivers experience depression symptoms (HSF, 2014, section 4.0).

**Cardiac monitoring**

**Knowledge.** ECG and Holter monitoring are standard assessments following a stroke. These investigations may identify any arrhythmias that may have gone undiagnosed and need to be treated (Jeerakathil et al, 2012). Atrial fibrillation is associated with cardioembolic ischemic strokes. Once identified, patients are most commonly prescribed anticoagulant therapy for stroke prevention. The newer oral anticoagulants (dabigatran, rivaroxaban and apixaban) are as effective as warfarin (Coumadin); however, the risks and benefits for each individual should be considered when prescribing them (Coppens, Hart & Eikelboom, 2013).

**Skill.** Observing and reporting the regularity of the pulse when taking the vital signs and ensuring the Holter monitor and ECG are completed is necessary to assess for any abnormalities. Providing patient education regarding ongoing anticoagulant use is important.

**Diagnostic Imaging Tests (DI)**

Neuroimaging and diagnostic investigations include: CT scan, cerebral angiography, MRI, carotid Doppler and echocardiogram. These tests are critical to the diagnosis and determining the etiology of the stroke (Jeerakathil et al, 2012; Summers et al., 2009). Explaining each of the tests to the patient and family is important and contributes to developing a trusting relationship with the patient and family.

**Nurse’s role in education of patient and family**

The sudden signs and symptoms of a stroke are considered a medical emergency (HSF, 2014). It is essential that patients and families are educated about stroke and are able to recognize and respond to the signs and symptoms of acute stroke. Understanding the modifiable risk factors associated with stroke is important for secondary prevention (Cameron, 2013; Dombrowski et al., 2013; Justice et al., 2008). This is especially important in improving public awareness and ensuring a quick response if symptoms recur (Cameron, 2013; Dombrowski et al., 2013; Justice et al., 2008). The risk factors to be discussed include: hypertension, diabetes, dyslipidemia, cardiac disease, smoking, excessive alcohol consumption, drug abuse, obesity and physical inactivity (Graham, 2008; Jeerakathil et al, 2012). Interactive discussion with the patient and families is desirable to review the risk factors related to stroke and to ensure transfer of knowledge about the patient’s progress; the goal is to lessen the occurrence of another stroke (Cameron, 2013; Lindsay et al., 2008). It is necessary to educate the patient and family regarding the current medications (benefits and side effects) the patient is taking (Graham, 2008).

**Rehabilitation**

Discharge planning and rehabilitation begin on admission on the clustered stroke unit with the use of an interdisciplinary team (Lindsay et al., 2008). The smooth transition from the hospital to home involves effective discharge planning (Summers et al., 2009). Improved patient outcomes are dependent on having support systems, both family and community, in place for the patient when discharged (Summers et al., 2009). For patients not needing in-hospital rehab, the Early Supported Discharge (ESD) program is valuable; an interdisciplinary team treats the patient in their home environment for five days a week (HSF, 2014, section 5.4.2). This program has shown to be a cost-effective method of discharging the patient to their home with therapy supports (Langhorne et al., 2013).

**Palliative care**

In the initial phase, all stroke patients should have access to acute stroke care, whether on a dedicated or clustered unit (Burton & Payne, 2012). When it is identified that the patient experiencing stroke is not going to survive the devastating event, palliative care then becomes necessary (Burton & Payne, 2012; Cowey, 2012; Payne et al., 2010). Palliative care needs to be integrated within the acute stroke care model (Burton & Payne, 2012). Palliative care encompasses the time period months before death, while end-of-life is the component of palliative care when death is imminent (Cowey, 2012). Planning for palliative care with patients who experience a sudden acute stroke and die within the first 30 days is difficult to prepare for, as it is such an unexpected event for the patient and family (Payne et al., 2010). In 2011–2012, the 30-day mortality rate post-stroke was 17.9% in Canada (HSF, 2014). According to the qualitative study by Payne et al. (2010), families want their loved ones to die in peace and with dignity. In order for nurses to be effective in palliative care treatment, education and training has to be provided that incorporates the integration of palliative care on an acute stroke unit (Burton & Payne, 2012).

**Discussion**

Patients who experience stroke take a high-priority status in treatment requiring a skilled nursing and interdisciplinary team, as the sudden signs and symptoms of a stroke are considered a medical emergency (HSF, 2014). The majority of patients do not present early enough to receive the clot buster (t-PA) drug. Therefore, care provided on an acute designated stroke unit or
clustered within a general medical unit can significantly impact the survival and reduction of disability and length of stay (LOS) for patients (Stavem et al., 2011). Acute care focuses on stabilizing the patient, as well as preventing deterioration and medical complications during the first few days following for either an ischemic or hemorrhagic stroke (HSF, 2014).

Improved patient outcomes occur when proper acute stroke care is provided (McCann, Groot, Harnley & Gardner, 2009; Saposnik et al., 2011). It is the responsibility of the nursing staff to apply the nursing skills and knowledge in a timely manner to ensure patient outcomes are optimised (HSF, 2014). All nurses require certification in the NIHSS and TOR BSST (swallow screen) as part of their qualifications to work on a clustered stroke unit. To be effective, medical units providing care for clustered stroke patients need skilled nursing staff who collaborate closely with an interdisciplinary team (Brooke & Walia, 2013; Langhorne et al., 2013). The focus of this interdisciplinary team is early rehabilitation and incorporation of a number of complex interventions, management of physiological variables such as vital signs (BP, pulse, respiratory function and oxygenation), hydration and nutrition, early swallow screen, and early mobilization (Brooke & Walia, 2013; Langhorne et al., 2013). An awareness of the complications that can occur following a stroke is necessary; care is directed towards preventing or reducing those complications. Jeerakathil et al. (2012) states that the most common complications include: "pneumonia, urinary tract infections (UTI), falls, seizures, decubitus ulcer and VTE" (p. 54). The factors that contribute to variations in outcome, reduced hospital stay, rehabilitation in hospital, early supported discharge program and death require specialized training and expert knowledge to prepare the nurse to deal with these type of outcomes. Knowledge and skills requisite for optimal care of the clustered stroke patient are extensive and described under the review of the literature.

In addition, admission to a stroke unit significantly contributes to reducing the social and economic aspects of the burden of stroke (Di Carlo et al., 2011). The financial burden is high with both direct costs (costs around hospital and rehabilitation care) and indirect costs (loss of productivity and future earnings) (Summers et al., 2009). Having dedicated stroke care has been found to be cost effective, primarily due to the decrease in length of hospital stay, improvement in patient outcomes and decrease in long-term care costs (Jeerakathil et al., 2012; Langhorne et al., 2013). Alternatively, a clustered stroke care model (providing care to four or more patients “clustered” on a medical unit), may also impact that financial burden by decreasing costs with skilled nursing staff and a dedicated interdisciplinary team.

Conclusion
Based on the literature review, clustered stroke patients on general medical units with nursing staff trained in stroke care would likely improve patient outcomes over what is achievable on general medical units with nurses with no specialized training. When patients are treated on either a dedicated stroke unit or clustered stroke unit, they are more likely to survive the stroke, regain independence and return home compared with those patients who are not treated with specialized care (Stroke Unit Trialists’ Collaboration, 2013). Some of the areas of particular importance include: NIHSS certification, TOR BSST (or similar swallow screen certification), neurological assessment, preventing complications by providing hydration and nutrition, monitoring hypertension, temperature, blood glucose, ensuring mobility and proper positioning, educating the patients and families on the disease process, treatment, rehabilitation processes and patient progress. Having a dedicated stroke unit may not be practical or feasible because of population distribution, particularly for smaller urban and rural communities. Therefore, educating nurses on the general medical units to provide care to clustered stroke patients requires specific skill training.

Keeping the communication open with the patient and family by being honest and transparent in all areas of the care is crucial. Stroke is such an unexpected and devastating event for both the patient and family; effective communication with the patient and family impacts the overall experience. Palliative and end-of-life care are areas where nurses specialized in stroke care can greatly assist the family in dealing with the death of their loved one.

Dedicated and organized stroke unit care is ideal, but it is not always possible. Having well trained and skilled nursing staff specialized in stroke care improves patient outcomes following stroke. Whenever possible, having stroke patients clustered on a general medical unit with nurses who have the specialized nursing knowledge and skill sets, improves patient outcomes, decreases LOS in hospital and has the greatest opportunity of returning the patient home as a functioning member of their community. The hope is a positive outlook for such a devastating disease.

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Abstract
We undertook a retrospective study of 5,189 telephone calls made between January 2004 and June 2011 through our adult epilepsy clinic hotline to a single epileptologist initially and two epileptologists from June 2010 onwards. The majority of calls were made by patients themselves (72%), followed by family members (16%) and health care providers (11%). Half of the calls originated from outside the city limits. Most were related to medication (25%), notification of seizures (23%), appointments or tests (12%), and side effects (9%). Half of the workload was generated by 10% of patients. The hotline service appears to respond to needs, with most calls requiring rapid intervention. It is desirable to develop novel approaches to address the needs of high-frequency callers.

Key words: epilepsy, clinic, nursing, telephone, hotline

Analyse rétrospective des questions posées au service d’assistance téléphonique d’une clinique d’épilepsie

Résumé
Nous avons entrepris l’étude rétrospective de 5 189 appels téléphoniques effectués entre janvier 2004 et juin 2011 par l’intermédiaire du service d’assistance téléphonique d’une clinique d’épilepsie à un seul épileptologue d’abord, puis à deux épileptologues à compter de juin 2010. Les appels ont été faits majoritairement par les patients eux-mêmes (72 %), puis par les membres de la famille (16 %), suivis des fournisseurs de soins (11 %). Un appel sur deux provenait de l’extérieur de la ville. La plupart d’entre eux portaient sur la médication (25 %), puis la manifestation d’une crise (23 %), les rendez-vous et les examens (12 %) et les effets secondaires (9 %). La moitié de la charge de travail était occasionnée par 10 % des patients. Le service d’assistance téléphonique semble répondre aux besoins, en notant que la majorité des appels nécessitent une intervention rapide. Il est souhaitable d’élaborer des approches novatrices en vue de répondre aux besoins de ceux qui appellent fréquemment.

Introduction
Epilepsy is a chronic condition characterized by recurrent, spontaneous seizures resulting from abnormal and excessive neuronal discharges (Engel & Pedley, 2008). Long-term drug therapy is the most common treatment form, but finding antiepileptic drugs that provide adequate seizure control with minimal or no side effects may warrant several drug modifications or dose adjustments. This is especially true for a subset of patients, labelled as pharmaco-resistant or drug-refractory, who have failed at least two adequate trials of antiepileptic drugs and for whom the chances of complete seizure control with additional drug trials are relatively low (Kwan & Brodie, 2000). For these patients, alternative treatments, such as epilepsy surgery or vagus nerve stimulation, may be considered. Uncontrolled seizures are not only a major personal handicap, but also represent a considerable public health burden due to high use of health-care resources and high numbers of disability days or unemployment (Tellez-Zenteno, Pondal-Sordo, Matijevic, & Wiebe, 2004; Wiebe, Bellhouse,Fallahay, & Eliaziw, 1999). Furthermore, chronic epilepsy generally impairs cognition, most severely in patients with early onset in life and its treatment. Prompt interventions are likely to reduce the risk of complications (e.g., unwanted pregnancy, breakthrough seizures) and improve quality of life. To our knowledge, however, the reasons for calls to epilepsy nurses have not previously been examined. In this study, we retrospectively analyzed all phone calls made to our epilepsy clinic over a period of seven years to identify user profiles and the reasons for their calls.
Methods

We retrospectively reviewed all telephone calls received between January 1, 2004, and June 4, 2011, at a tertiary academic epilepsy centre. Although the clinic is run by four epileptologists, only calls placed to a single epileptologist (DKN) initially and then to two epileptologists (DKN, PC) after June 2010 were analyzed, because messages had not been systematically documented and stored by the others. Messages received from 2004 to 2010 were collected as written note-messages by phone clerks. From June 2010 to June 2011, calls were directed to the epilepsy nurse. The epilepsy clinic hotline is open Monday through Friday from 8:30 a.m. to 4:30 p.m. Outside working hours or when the line was busy, the patient could leave a message on the nurse’s voice mail. These calls were documented on a standard nurse sheet and stored in the patient’s electronic chart. The general mode of operation of our epilepsy clinic hotline is as follows: contact information for the epilepsy clinic hotline (telephone and fax numbers) were usually provided to all patients attending the clinic (and/or accompanying family members/caregivers) in the form of a business card with instructions to call for any breakthrough seizures or drug side effects. Messages are generally taken and answered within 24–48 hours, depending on the level of urgency. When the issue could be easily resolved by the nurse (e.g., questions related to driver’s licence, referrals to community resources or support groups, general questions on seizure triggers, and lifestyle issues, etc.), the attending physician was only briefly notified during weekly working sessions. If the caller’s problem required the input of the epileptologist, the nurse gathered the pertinent information (e.g., number of seizures, type of seizure, circumstances of seizure, current medications, treatment compliance, abuse of drugs or alcohol, drug information including side effects, etc.) and discussed the case with him. Once a course of action was determined, the nurse would then inform the patient of the proposed plan and the follow-up process, if necessary. New prescriptions were faxed to the patient’s pharmacy when drug changes were required.

For each call (when possible), one of the authors (AL) determined the caller’s identity, the patient’s identity (if different), his/her age, place of residence by geographic region, call date, call time and reason for call. Reasons for calling were classified in seven categories (established based on prior personal experience): a) notification of seizure(s); b) notification of side effects; c) general questions on epilepsy or epilepsy surgery; d) questions about antiepileptic drug therapy other than notification of side effects (e.g., general information on drugs, timing of drug administration, rapidity of titration, dosage, possible drug interactions, renewal of expired medication prescription, reporting of self-medication changes, trouble paying for drugs, generic substitutions, etc.); e) requests to fill in medical forms; f) appointment or test scheduling or results; and g) miscellaneous.

Results

Between January 1, 2004, and June 4, 2011, we received 5,189 calls from 1,232 patients with a mean of 58 calls per month. The number of calls per month varied throughout the year, with the fewest calls received during holiday seasons. The busiest calling time window was between 10 a.m. and 12 noon. While some patients only made one call over the six-year period, others called up to 89 times during the same period. Almost half the workload (n=2,375/5,189; 46%) was generated by 10% of patients (n=117/1,232), ranging from 11 to 89 calls during this 89-month period (Table 1).

Table 1: Workload according to number of calls per person

<table>
<thead>
<tr>
<th>Categories based on number of calls during a period of 89 months</th>
<th>Number of patients per category</th>
<th>Percentage of total callers per category</th>
<th>Total number of calls answered (workload) per category</th>
<th>Percentage of workload generated per category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>562</td>
<td>45.62%</td>
<td>562</td>
<td>10.83%</td>
</tr>
<tr>
<td>2-5</td>
<td>418</td>
<td>33.93%</td>
<td>1,226</td>
<td>23.63%</td>
</tr>
<tr>
<td>6-10</td>
<td>135</td>
<td>10.96%</td>
<td>1,025</td>
<td>19.75%</td>
</tr>
<tr>
<td>11-15</td>
<td>56</td>
<td>4.55%</td>
<td>714</td>
<td>13.76%</td>
</tr>
<tr>
<td>16-20</td>
<td>22</td>
<td>1.79%</td>
<td>391</td>
<td>7.54%</td>
</tr>
<tr>
<td>21-30</td>
<td>23</td>
<td>1.87%</td>
<td>565</td>
<td>10.89%</td>
</tr>
<tr>
<td>31-50</td>
<td>13</td>
<td>1.06%</td>
<td>499</td>
<td>9.62%</td>
</tr>
<tr>
<td>51 +</td>
<td>3</td>
<td>0.24%</td>
<td>206</td>
<td>3.97%</td>
</tr>
</tbody>
</table>

Figure 1: Histogram of callers’ ages. Age groups (in years) are plotted on the x-axis and frequencies on the y-axis.
Caller characteristics
Caller identity was available for 3,704 of the calls (71%). The majority of calls were made by patients themselves (72%), followed by family members (16%), health care providers (11%) and others (1%). Mean age of patient callers was 39 years (determined from 991 patients), with 32% of patient callers being 20–30 years old and 22% 40–50 years old. Calls made by family members and professionals mainly concerned patients in the 20–30-year-old age group (40.74% and 34.18%, respectively) (Figure 1). Calls originated from 17 demographic areas, half from the hospital urban area (49%) and the remainder from the rest of the province.

Reasons for calls
Reasons for calling could be identified for 3,904 of the calls (75%). Most of the calls were related to medication (25%) and notification of seizures (23%), followed by questions about appointments or tests (12%), notification of side effects (9%), medical forms (8%) and general questions about epilepsy or epilepsy surgery (3%) (Figure 2). The main reason for calling differed, depending on the category of caller: while patients and health care providers primarily called with questions concerning medications (440/2,000; 22% and 166/282; 59%, respectively), family members mainly called for seizure notification (27%) (Figure 3).

Discussion
Our study revealed that the epilepsy clinic hotline is a service used by patients, family members and health care providers. The majority of calls required rapid intervention (i.e., related to seizures or medication). Half of the calls were made by patients living outside the city limits. Finally, close to half of the hotline workload was generated by 10% of patients. To our knowledge, this is the first time such a quantitative analysis of calls made to an adult epilepsy clinic has been performed. A previous study explored 208 calls to a telephone nursing line over a two-week period, but in the setting of a pediatric neurology clinic (Letourneau et al., 2003). It is noteworthy, however, that the most common patient diagnosis in that investigation was epilepsy (63.5%), indicating that the particular nature of the disorder (unpredictability of seizures, severity and frequency of disease manifestations in some patients, high number of treatment options, etc.) requires such a service. Using a questionnaire sent to 193 patients, another study looked at reasons for contacting the epilepsy nurse service at a tertiary centre (Hosking, Duncan, & Sander, 2002). Authors found that the main discussion topics were medication side effects (59%), general epilepsy issues (45%), worsening seizures (31%), support (23%), surgery (18%), pregnancy issues (9%) and employment (5%). These findings, though obtained in a different way, are in line with our observations.

In our study, the mean number of calls per month was 58. Considering that the study was limited to analyzing calls to a single epileptologist for most of the study period, we can safely deduce that the frequency of calls per month would have been much higher had we recorded the calls made to other epileptologists in the group. A significant numbers of calls came from outside the city limits, which could be explained by the tertiary nature of our clinic, the lack of resources in rural regions, and the convenience of long-distance calling by patients living far from the clinic.

Implications for nursing practice
The high number of calls confirms the importance of an epilepsy clinic hotline and, indirectly, the importance of the epilepsy nursing specialist who directs it. Responding to telephone calls is time-consuming, but vital to ensure continuous patient care. Indeed, the task may require several actions such as
playing phone tag, obtaining the necessary information from the patient or caretaker, discussing the problem at hand with the treating physician, explaining to the patient or caretaker the plan of action and communicating with the pharmacy to modify the treatment. Several reports have already described how epilepsy nursing specialists play an integral part in the provision of care to epileptic patients by making the link between them and their epilepsy specialist, implementing medication changes without undue delay between regular visits, educating patients and family members on epilepsy in general, and helping them overcome the stigma of epilepsy (Bradley & Lindsay, 2001; Couldridge, Kendall, & March, 2001; Goodwin, Higgins, Lanfear, Lewis, & Winterbottom, 2004; Helde, Bovim, Brathen, & Brodtkorb, 2005; Hosking et al., 2002; Rajpura & Sethi, 2004; Ridsdale, Kwan, & Morgan, 2003). Although this cannot be verified with these data per se, it is likely that the epilepsy clinic hotline prevented some emergency room visits, patient hospitalizations or adverse events from prescription errors, considering that the main reasons given for calling were related to seizures or medication requiring prompt intervention.

Limitations
The main limitation of our study lies in its retrospective nature. Information collected was not obtained in a systematic manner. Hence, the data originated mainly from calls by patients followed by only one of the epilepsy specialists running the clinic. Furthermore, caller identification, relationship to patient and reasons for calling were not available for some patients. There was no documentation of the amount of time spent on calls, the amount of work generated (sifting through patients’ medical charts, discussions with other health care professionals, writing letters, etc.), how many of these calls were subsequently discussed with the epilepsy specialist, or how many outgoing calls these index calls generated. Finally, we did not assess whether interventions prevented emergency room visits or hospitalizations. While the retrospective nature of this study is a limitation, we feel the data presented could still contribute to understanding the profiles and motives of adult epilepsy clinic hotline users and the associated workload.

Future research
A prospective study is currently underway to confirm our observations and answer additional questions that have stemmed from this retrospective work, while addressing some of the limitations mentioned above. Such work is bound to help improve the organization of the clinic and our provision of care to epileptic patients. For example, if one of the main motives for calls by patients or caregivers is to obtain additional information on the antiepileptic drugs that were prescribed, this could change the way physicians provide information during clinic visits or push for the development of leaflets to be given out at the end of the visit. If one of the main reasons to call is related to comorbidities of epilepsy, this could promote the more widespread use of self-report questionnaires such as the Beck Anxiety Inventory or the Neurological Disorders Depression Inventory for Epilepsy at the clinic. Understanding the various motives and how frequently these motives lead to a visit to the emergency room if not addressed in time could lead to recommendations on response times for each of these motives. One of the most interesting findings was that close to half of the epilepsy clinic hotline workload was generated by 10% of patients. Further work on this particular subset of callers is necessary to identify factors associated with their high calling frequency: is it related to disease severity (seizure frequency or type), psychiatric co-morbidities, socio-economic status, level of familial or social support, etc.? Such an analysis could lead to more specific interventions designed to address the needs of these patients. For example, it may very well be possible that the main reason why some of these patients call so often is related to a lack of social network, a personality disorder, psychological distress, cognitive deficits, poor compliance, financial issues or substance abuse problems rather than the seizures themselves, and that addressing these issues is more profitable than simply changing their antiepileptic regimen. Potential solutions could then include, among other things, the involvement of support groups, home visits by nurses or social workers and educational epilepsy nursing interventions. The fact that the main motive for calling differed between patients, who called mainly with regard to medications, and family members, who mainly used the hotline mainly for seizure notification, may suggest that such educational interventions should be adapted to the particular target audience. For example, patients may possibly require more education on the treatment and day-to-day management of their condition, while family members need more information regarding their relative’s condition. Ideally, the outcome of measures that would be put in place and patient satisfaction with the service would need to be assessed as well.

Conclusion
Our epilepsy clinic hotline is frequently used by patients, family members and professionals for reasons generally related to seizures and antiepileptic medications. A prospective study is underway to confirm our observations and assess whether interventions stemming from these calls can prevent emergency room visits or hospitalizations. It will also give us more details on the small subset of high-frequency callers responsible for a large portion of the hotline workload so that additional strategies aside from medication adjustments can be put in place to better address their needs, whether for further education, psychological support, home visits, day centre or other measures.

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REFERENCES


Second call for abstracts

The theme for 2015 is Rock with CANN in Newfoundland

The Newfoundland and Labrador Chapter of CANN invites you to share in our efforts to showcase the important work neuroscience nurses do every day across the health care settings. The 46th meeting of the Canadian Association of Neuroscience Nurses will be held June 23–26, 2015, in St. John’s, Newfoundland.

The conference will take place at the Sheraton Hotel Newfoundland in historic downtown St. John’s. St. John’s is the provincial capital and is the perfect combination of big-city luxury and small-town charm. As the oldest and most easterly city in North America, this is where heritage lives. Melded with culture, history, and personality, St. John’s has survived two World Wars, five centuries, countless hardships and triumphs. It’s become a rare, old city full of character, experience and charisma, with a contemporary, sophisticated edge.

We invite you to share with an audience from across Canada and beyond, your:
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- successes
- original research
- case studies
- literature reviews
- quality improvement projects and
- proven treatment, nursing techniques.

Abstract guidelines and template are available on the CANN website: http://cann.ca.

Additional notes
Please note the deadlines associated with these awards.

Requirements for preparing abstracts:
1. On a single page, the abstract must describe the central theme of the paper, workshop or poster. **Maximum length 200 words or fewer.**

2. Type your name and the title of your poster or presentation or workshop on the top of the page. The first author should be the person presenting the paper, workshop or poster. Submit a second copy of the abstract with the title only. Do not include any names on this second abstract. A blind review process is used for abstract selection.

3. Indicate the following on the abstract page:
   i. Intended level of audience (basic, advanced, or all participants).
   ii. Intended subspecialty (e.g., pediatrics, neurology, neurosurgery, neuro-critical care, etc.).
   iii. Preferred format of your session (plenary, concurrent, workshop or poster).

4. Send the following via e-mail only:
   - Microsoft Word files:
     i. One file of the completed abstract with title and author
     ii. One file of the completed abstract with title only
     iii. One file with curriculum vitae for each presenter
     iv. One file with authors’ information and audiovisual requirements
     v. Your return email address

5. If you wish your abstract to be considered for one of the awards available, please indicate this with your initial submission. Details of the awards available are at www.cann.ca, or speak with your local chapter councillor.

Deadline for abstract submissions:

**January 1st, 2015:** All abstracts for paper and workshop presentations must be received.

**January 1st, 2015:** All abstracts for poster presentations must be received.

**January 1st, 2015:** Intent to submit an application for the Codman Award, Brain Tumour Foundation Award, or Medtronic Award must be received (see below for further information on requirements for these awards).

Additional Guidelines for Workshop Submissions: please indicate
1. The desired length of the workshop (i.e., half a day or one day);
2. The desired minimum and maximum number of workshop participants
3. Learning objectives for the workshop (to be included in abstract submission; please refer to Requirements for Preparing Abstracts or online www.cann.ca)
4. AV equipment, room set-up, and other logistic constraints
5. Refreshments and/or meals, name of sponsor(s)
6. Handouts and/or any learning materials required are the responsibility of the workshop organizers.

Additional Notes and Award Guidelines
Canadian Journal of Neuroscience Nursing has the first right of refusal for the publication of the Mary Glover, Codman Award, Brain Tumour Foundation, and Medtronic Award papers presented at these scientific sessions.

All presenters must register for the conference, at least for the day of their presentation, and pay the applicable registration fee.

Award, Bursary or Scholarship Guidelines Codman Award
$1,500.00 from Codman.

The **Codman Award** will be presented to the author or authors of a written paper that demonstrates the achievement of excellence in the area of neuroscience nursing research. It is expected that the money will be used for professional development.

**ELIGIBILITY**
1. At least one of the author(s) is a general/honorary member of the Canadian Association of Neuroscience Nurses (CANN) and was a general/honorary member in the preceding year.
2. The author(s) stipulates in writing the intention to seek the award by the call for abstracts deadline; the deadline is November 1 each year.
3. The author(s) is prepared to present the paper at the CANN Annual Meeting.
4. The paper contains original work by the author(s).
5. The paper may be an adaptation from a previous work by author(s); this must be stated.
6. The award may not be presented to the same author(s) two consecutive years.

**CONTENT**
1. The paper is written according to the manuscript guidelines for publication.
2. The author(s) presents a logical development of ideas based on scientific evidence.
3. The author(s) demonstrates creativity and originality.
4. The paper has implications for neuroscience nursing practice, education, administration or research.
5. The paper is relevant to current trends in neuroscience nursing.
6. The paper demonstrates comprehensive knowledge of the topic.

**STYLE**
1. The paper is written according to the manuscript guidelines for publication as established by the Canadian Journal of Neuroscience Nursing.

**SELECTION**
1. The paper is selected by the Scientific Program Committee through consultation with the scientific liaison and editor of CJNN.
2. The Scientific Program Committee reserves the right to withhold the award if no paper meets the specifications.
3. The Scientific Program Committee must receive papers for consideration by February 15.

**PRESENTATION**
1. A representative of the Codman Company at the Annual Meeting presents the award.

**PUBLICATION**
1. The completed paper must be submitted to the editor of CJNN, or designate (e.g., peer reviewer) at the Annual Meeting for publication.
2. The monetary portion of the award will be withheld until publication in CJNN.

**Medtronic Award**
$1,000.00 Travel Grant from Medtronic.

The Medtronic Award will be presented to the author or authors of a written paper that demonstrates the achievement of excellence in the area of neuromodulation or neuroscience nursing clinical practice. It is expected that the money will be used to assist the recipient with travel expenses to attend the annual meeting to present their paper.

**Eligibility**
1. At least one of the author(s) is a general/honorary member of the Canadian Association of Neuroscience Nurses (CANN) and was a general/honorary member in the preceding year.

**Brain Tumour Foundation Award**
$1,500.00 from BTF of Canada.

The Brain Tumour Foundation Award is presented to a member of the Canadian Association of Neuroscience Nurses (CANN) who demonstrates excellence in neuroscience nursing related to brain tumours. Established in honour of Pamela Del Maestro, RN, BSc, CANN member and a co-founder of the Brain Tumour Foundation of Canada, the award includes the publication of the winner’s paper in the Canadian Journal of Neuroscience Nursing.

**Eligibility**
1. At least one of the author(s) is a general/honorary member of the Canadian Association of Neuroscience Nurses (CANN) and was a general/honorary member in the preceding year.
2. The author(s) stipulates in writing the intention to seek the award by the call for abstracts deadline; the deadline is November 1 each year.
3. The author(s) is prepared to present the paper at the CANN Annual Meeting in the year the award is being presented.
4. The paper contains original work by the author(s).
5. The paper may be an adaptation from a previous work by author(s); this must be stated.
6. The award may not be presented to the same author(s) in two consecutive years.
7. The author may not be the recipient of any other CANN awards in the same given year.

CONTENT
1. The paper is approached from a nursing perspective.
2. The paper is relevant to care of patients with brain tumour.
3. The author(s) presents a logical development of ideas based on scientific evidence.
4. The author(s) demonstrates creativity and originality.
5. The paper has implications for neuroscience nursing practice, education, administration or research.
6. The paper is relevant to current trends in neuroscience nursing with brain tumour patients.
7. The paper demonstrates comprehensive knowledge of the topic.

STYLE
1. The paper is written according to established guidelines for the writing of a manuscript as per Canadian Journal of Neuroscience Nursing (CJNN) guidelines.
2. The paper shall not exceed 20 double-spaced typed pages.

SELECTION
1. The Scientific Program Committee selects the paper in collaboration with the editor of CJNN and the Scientific Liaison.
2. The Scientific Program Committee reserves the right to withhold the award if no paper meets the specifications.
3. Papers for consideration must be received by the Scientific Program Committee by February 15 of each year.

PRESENTATION
1. A representative of the Brain Tumour Foundation at the Annual Meeting presents the award.

PUBLICATION
1. The completed paper must be submitted to the editor of CJNN, or designate (e.g., peer reviewer) at the Annual Meeting for publication.
2. The monetary portion of the award will be withheld until publication in CJNN.

Jessie Young Awards
- Bursary
- Certification
- Abstract

The Jessie Young Bursary/Certification Award was established to promote continuing professional education in line with the mission and vision of CANN. These bursaries provide financial support to qualified nurses to pursue additional training in neuroscience nursing.

APPLICATION REQUIREMENTS

Guidelines:
1. These bursaries are open to registered nurses who have worked in neurosciences and are members of CANN in good standing for at least two years.
2. The program or course of study for the Jessie Young Bursary must have a clear neuroscience focus or component.
3. Successful candidate(s) must agree to write a letter to be published in the CJNN describing how completion of the course will advance neuroscience nursing.

Application:
A complete application consists of:
1. A completed application form.
2. Proof of acceptance into the educational program or course of study for which the bursary is being sought, or proof of registration to write the certification exam.
3. Evidence of amount of registration fees.
4. Proof of current registration with provincial nursing association.
5. One letter of reference from a person who has had the opportunity to assess your work. Acceptable referees include:
   - another member of CANN
   - manager
   - educator (institution or hospital).

Application deadline:
1. The closing date for receipt of applications for the Jessie Young Bursary is April 1 each year.
2. The closing date for receipt of applications for the Certification Award is May 31 of each year.

Jessie Young Bursary (Continuing Education) **

CRITERIA FOR THE JESSIE YOUNG BURSARY—Continuing Education

Beliefs and purpose
CANN believes that post-basic programs/continuing nursing education (with a neuroscience nursing focus) programs, help to promote excellence in neuroscience nursing practice. One of the organization's main aims is to foster the continuing professional education of members. The Jessie Young Bursary for study in a Canadian post-basic neuroscience nursing program provides support for CANN members to pursue their professional growth and contribute to the achievement of excellence in neuroscience nursing.

Program criteria
1. The Program must be offered at a recognized university or college in Canada.
   The participant must:
   • be a registered nurse, eligible for registration in the province where the course is offered
   • have a minimum of one year's experience in neuroscience nursing
   • demonstrate acceptance into the recognized program
   • clearly state the specific neuroscience nursing focus that will be studied if in a continuing education program (i.e., Bachelor of Nursing)
   • must remain a member of CANN for at least one year, post completion of studies.
MASTER'S DEGREE IN NURSING OR EQUIVALENT CRITERIA FOR THE JESSIE YOUNG BURSARY

Beliefs and purpose
CANN believes that a master’s degree in nursing or equivalent with a focus in neuroscience nursing clinical practice, education, consultation, administration, or leadership helps to promote excellence in neuroscience nursing practice. One of the organization’s main aims is to foster the continuing professional education of members.

Program criteria
1. The program must be a recognized Master’s of Nursing (or equivalent) program or a Doctorate in Nursing program in Canada.
   The Participant must:
   • demonstrate acceptance into a recognized program
   • clearly state the specific neuroscience nursing focus that will be studied
   • must remain a member of CANN for at least one year post completion of studies.

Jessie Young Abstract Award
The Canadian Association of Neuroscience Nurses established the Jessie Young Abstract Award to promote continuing professional education in line with the mission and vision of CANN and to help facilitate the attendance of members at the Annual Meeting and Scientific Sessions. This award provides funding for one conference registration from the accepted abstracts for the Annual Meeting and Scientific Sessions.

Marlene Reimer Research Award
The Marlene Reimer Research Award was established to promote neuroscience nursing research in line with the mission and vision of CANN. This award provides financial support to qualified nurses to pursue a research project focusing directly on neuroscience patient care issues relevant to the scope of nursing practice in Canada. The amount awarded is determined yearly. The award may be awarded to one or more individuals depending on available funds.

1. Research funds will be allocated yearly based on numbers of requests.
2. Application deadline is November 1 annually.
3. The total Marlene Reimer Research Award be $2,000 plus the net profit from the Run for Research of the previous year—to be reviewed annually at the midyear meeting by the BOD.
4. Fundable projects will focus directly on neuroscience patient care issues.
5. Projects will focus on issues within the scope of nursing practice in Canada.
6. The primary investigator must be a nurse and an active member of CANN in the preceding year.
7. A letter of request plus the proposal shall be sent to the chairperson of the research committee (may be sent electronically).
8. An additional two copies of the proposal will be mailed electronically to the research chairperson—one copy includes identifying information (research team members, health care setting) and the second copy does not include this information.
9. A letter of support from management/clinical supervisor describing the contribution of this neuroscience nursing research study proposal should accompany the application.
10. The research proposal shall include the following:
   • title of project
   • names and qualifications of the principal and co-investigators
   • purpose of the project
   • methodology (including sample, procedures and data analysis plan)
   • evidence of consent by the ethics committee of the institution/agency from which the research subjects will be selected, if applicable
   • budget and time frame
   • amount of money requested from CANN.
11. The proposed budget should include the following headings:
   • professional services
   • supplies
   • services
   • travel (does not include funding for travel to present findings at annual CANN meeting)
   • equipment.
12. Proposals should also include details about other funding sources, including those confirmed and those pending.
13. The Research Committee will review proposals and notify the Board of Directors on decisions about funding awards:
   • the award will be given to the recipient at the time the decision is made and official recognition will be given at the annual meeting luncheon
   • those who receive funding shall provide progress reports to the Research Committee upon request
   • the deadline for applications for research funds will be November 1, and will be published in CJNN
   • researchers are expected to publish their results in CJNN and present them at the Annual Meeting
   • researchers must submit a report of their research to the Research Committee.

CJNN Author Awards
1. All authors who submit a paper that is published in CJNN, who are not receiving another award (such as Codman, Medtronic, or Brain Tumour Awards from CANN) are eligible for the New Authors’ Award or General Authors’ Award.
2. New Author is defined as an author who publishes in CJNN for the first time.
3. Eligible authors’ names will be entered into the separate draws that will be held at the June meeting.
4. Cheques for $200.00 will be presented to the winners of each of the two authors’ awards at the Annual General Meeting in June.
5. The successful authors do not need to be CANN members.
6. Successful authors who are not present at the time of announcement of the awards will have their award(s) mailed to them.
7. This reward will come out of the CJNN budget.
8. If there are no new authors in any given year, a second general author award will be drawn from the eligible authors of the same year.
9. The award will be presented by the editor of CJNN or designate.
Première demande de résumés

Le thème de 2015 est L’ACIIN à Terre-Neuve : à la fine pointe du pays en neurosciences

Le chapitre de l’ACIIN de Terre-Neuve-et-Labrador vous invite à partager vos connaissances dans le cadre de nos efforts pour mettre en valeur le travail important qu’effectuent quotidiennement les infirmières et infirmiers en neurosciences dans divers environnements de soins de santé. Le 46ème congrès de l’Association canadienne des infirmières et infirmiers en neurosciences se tiendra du 23 au 26 juin 2015 à Saint-Jean, à Terre-Neuve.

La conférence aura lieu au Sheraton Hotel Newfoundland, dans le centre-ville historique de Saint-Jean. Saint-Jean est la capitale de la province et associe à la perfection le luxe des grandes villes au charme des plus petites localités. Parce que cette ville est la plus ancienne en Amérique du Nord et celle la plus à l’est, notre patrimoine national y est omniprésent. Elle combine culture, histoire et personnalité et a survécu à deux guerres mondiales, cinq siècles, ainsi qu’à d’innombrables épreuves et triomphes. Elle est devenue une ville ancienne et rare, débordante de personnalité, d’expérience et de charisme, agrémentée d’une touche contemporaine et sophistiquée.

Nous vous invitons à partager avec des collègues provenant du Canada entier et d’ailleurs vos :
- • pratiques optimales
- • réussites
- • travaux de recherche originaux
- • études de cas
- • analyses documentaires
- • projets d’amélioration de la qualité
- • traitements et techniques en soins infirmiers éprouvés.

Les directives pour la rédaction des résumés et des modèles sont à consulter sur le site internet de l’ACIIN : http://cann.ca

Remarques supplémentaires

Règlements pour la rédaction d’un résumé :
1. Le résumé doit tenir sur une seule page et décrire le thème central de l’article, de l’atelier ou de l’affiche. Longueur maximum de 200 mots.
2. Inscrivez votre nom et le titre de votre affiche, présentation ou atelier en haut de la page. Le premier auteur ou la première auteure inscrit(e) devrait être la personne qui fera la présentation de l’article, de l’atelier ou de l’affiche. Veuillez envoyer un deuxième exemplaire de ce résumé en indiquant seulement le titre. N’inscrivez aucun nom sur ce deuxième exemplaire. Le choix des résumés se fera à l’aide d’un processus de sélection à l’aveugle.
3. Indiquez les éléments suivants sur la page du résumé :
   i. L’auditoire visé (novice, avancé ou tous les participants);
   ii. La spécialité visée (p. ex. pédiatrie, neurologie, neurochirurgie, soins critiques en neurologie, etc.);
   iii. Le format souhaité pour votre session (plénière, simulée, atelier ou affiche).
4. Envoyez le document par courriel seulement : Fichiers Microsoft Word :
   i. Un fichier comprenant le résumé avec le titre et l’auteur;
   ii. Un fichier comprenant le résumé avec le titre seulement;
   iii. Un fichier comprenant le curriculum vitae de chaque présentateur ou présentatrice;
   iv. Un fichier comprenant des renseignements sur l’auteur ou l’auteure et ses besoins en équipement audio-visuel;
   v. Votre adresse courriel.
5. Si vous désirez que votre résumé soit considéré pour l’un des prix disponibles, veuillez l’indiquer lors de votre soumission initiale. Des informations sur les prix sont à consulter à www.cann.ca, mais vous pouvez aussi communiquer avec le conseiller ou la conseillère du chapitre de votre région.

Faites parvenir les informations susmentionnées à : Jessica Milley, présidente scientifique de T-N, à jessicamilley@gmail.com

Un accusé de réception des fichiers ou de toute communication vous sera envoyé par courriel peu de temps après réception. Si vous n’avez pas reçu d’accusé ou si vous avez besoin de contacter telle ou telle personne, veuillez les contacter aux adresses courriel ci-dessus.

Dates limites pour la soumission des résumés

1er novembre 2014 : Tous les résumés de présentations d’article ou d’atelier doivent avoir été reçus. Si vous désirez remporter le prix Codman, le prix de la Fondation des tumeurs cérébrales ou le prix Medtronic, veuillez le mentionner lors de la soumission de votre résumé.

15 octobre 2014 : Tous les résumés de présentation d’affiche doivent avoir été reçus.

1er novembre 2014 : Toutes les soumissions pour le prix Codman, le prix de la Fondation des tumeurs cérébrales et le prix Medtronic doivent avoir été reçues.

Directives supplémentaires en vue de soumettre un atelier : veuillez préciser

1. La longueur souhaitée de l’atelier (c.-à-d. une demi-journée ou une journée entière);
2. Le nombre minimum et maximum de participants à l’atelier ;
3. Les objectifs d’apprentissage de l’atelier (à inclure dans la soumission du résumé; veuillez vous référer aux conditions à remplir pour la préparation d’un résumé à la page 39 du journal de l’ACIIN ou en ligne à www.cann.ca) ;
4. Équipement audio-visuel, arrangement de la pièce et autre contraintes logistiques;
5. Rafraîchissements et/ou repas, nom(s) du/ des commanditaire(s);

Remarques additionnelles et directives pour les prix

Le Journal canadien des infirmières et infirmiers en neurosciences a le droit de premier refus pour la publication des articles présentés à ces sessions scientifiques et ayant reçu le prix Mary Glover, le prix Codman, le prix de la Fondation des tumeurs cérébrales ou le prix Medtronic.

Tous les présentateurs et présentatrices doivent s’inscrire à la conférence au moins pour le jour de leur présentation et payer les frais d’inscriptions applicables.
Prix, bourse ou bourse d’études
Directives

Prix Codman

1 500 $ décerné par Codman.

Le prix Codman sera décerné à (aux) l’auteur(s) ou à l’ (aux) auteure(s) d’un travail écrit pour son excellence dans le domaine de la recherche en sciences infirmières en neurosciences. Il est attendu que l’argent sera utilisé à des fins de développement professionnel.

ADMISSIBILITÉ
1. Au moins l’un des auteurs ou l’une des auteures est membre général/honoraire de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) et en était membre général ou honoraire l’année précédente.
2. L’(les) auteur(s) ou l’(les) auteure(s) doivent stipuler par écrit leur intention d’obtenir ce prix à la date limite pour les demandes de résumés. La date limite est le 1er novembre de chaque année.
3. L’(les) auteur(s) ou l’(les) auteure(s) sont prêts à présenter le travail au congrès annuel de l’ACIIN.
4. Le travail est un ouvrage original de l’ (des) auteur(s) ou de l’ (des) auteure(s).
5. Le travail peut être l’adaptation d’un ouvrage précédent de l’(des) auteur(s) ou de l’ (des) auteure(s); ceci doit être mentionné.
6. Le prix ne sera pas présenté au(x) même(s) auteur(s) ou à la (aux) même(s) auteure(s) deux années consécutives.

CONTENU
1. Le travail a été écrit selon les directives de rédaction de manuscrit aux fins de publication.
2. L’(les) auteur(s) ou l’(les) auteure(s) présentent un développement logique d’idées s’appuyant sur des preuves scientifiques.
3. L’(les) auteur(s) ou l’(les) auteure(s) font preuve de créativité et d’originalité.
4. Le travail présente des implications pour des soins infirmiers en neurosciences, notamment au niveau de la pratique, la formation, l’administration ou la recherche.
5. L’article reflète les tendances actuelles en soins infirmiers en neurosciences.
6. Fait preuve d’une grande connaissance du sujet.

STYLE
1. Le travail est écrit selon les directives de rédaction de manuscrit aux fins de publication conformément aux directives du Journal canadien des infirmiers et infirmières en sciences neurologiques (JCIN).

SÉLECTION
1. Le document est sélectionné par le Comité du programme scientifique après consultation avec l’agent ou l’agente de liaison scientifique et le rédacteur ou la rédactrice en chef du Journal canadien des infirmières et infirmiers en sciences neurologiques.
2. Le Comité du programme scientifique se réserve le droit de ne pas accorder de prix si aucun article ne répond aux critères de sélection.
3. Le Comité du programme scientifique doit recevoir les travaux soumis pour le 15 février.

PRÉSENTATION
1. Le prix sera présenté par un représentant ou une représentante de la société Codman durant le congrès annuel.

PUBLICATION
1. L’article doit être soumis à l’éditrice du JCIN ou à la personne désignée (par ex., le réviseur ou la réviseuse) lors du congrès annuel afin d’être publié.
2. La portion monétaire du prix sera conservée jusqu’à la publication dans le JCIN.

Prix Medtronic

Subvention de voyage de 1 000 $ décernée par Medtronic

Le prix Medtronic sera décerné à l’(aux) auteur(s) ou à l’(aux) auteure(s) d’un travail écrit pour son excellence dans le domaine de la neuromodulation ou de la pratique clinique en soins infirmiers en neurosciences. Il est attendu que l’argent sera utilisé afin d’aider le ou la récipiendaire à payer les frais de voyage pour se rendre au congrès annuel et y présenter l’article.

ADMISSIBILITÉ
1. Au moins l’un des auteurs ou l’une des auteures est membre général/honoraire de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) et en était membre général ou honoraire l’année précédente.
2. L’(les) auteur(s) ou l’(les) auteure(s) doivent stipuler par écrit leur intention d’obtenir ce prix à la date limite pour les demandes de résumés. La date limite est le 1er novembre de chaque année.
3. L’(les) auteur(s) ou l’(les) auteure(s) sont prêts à présenter le travail au congrès annuel de l’ACIIN.
4. Le travail est un ouvrage original de l’(des) auteur(s) ou de l’(des) auteure(s).
5. Le travail peut être l’adaptation d’un ouvrage précédent de l’(des) auteur(s) ou de l’(des) auteure(s); ceci doit être mentionné.
6. Le prix ne sera pas présenté au(x) même(s) auteur(s) ou à la (aux) même(s) auteure(s) deux années consécutives.

CONTENU
1. Le travail a été écrit selon les directives de rédaction de manuscrit aux fins de publication.
2. L’(les) auteur(s) ou l’(les) auteure(s) présentent un développement logique d’idées s’appuyant sur des preuves scientifiques.
3. L’(les) auteur(s) ou l’(les) auteure(s) font preuve de créativité et d’originalité.
4. Le travail présente des implications pour des soins infirmiers en neurosciences, notamment au niveau de la pratique, la formation, l’administration ou la recherche.
5. L’article reflète les tendances actuelles en soins infirmiers en neurosciences.
6. Fait preuve d’une grande connaissance du sujet.
STYLE
1. Le travail est écrit selon les directives de rédaction de manuscrit aux fins de publication conformément aux directives du Journal canadien des infirmiers et infirmières en sciences neurologiques (JCIIN).

SÉLECTION
1. Le document est sélectionné par le Comité du programme scientifique après consultation avec l’agent ou l’agente de liaison scientifique et le rédacteur ou la rédactrice en chef du Journal canadien des infirmiers et infirmières en sciences neurologiques.
2. Le Comité du programme scientifique se réserve le droit de ne pas accorder de prix si aucun article ne réponde aux critères de sélection.
3. Le Comité du programme scientifique doit recevoir les travaux soumis pour le 15 février.

PRÉSENTATION
1. Le prix sera présenté par un représentant ou une représentante de la Medtronic Ltd. durant le congrès annuel.

PUBLICATION
1. L’article doit être soumis à l’éditeur ou à l’éditrice du JCIIN ou à la personne désignée (par ex., le réviseur ou la réviseuse) lors du congrès annuel afin d’être publié.
2. La portion monétaire du prix sera conservée jusqu’à la publication dans le JCIIN.

Prix de la Fondation des tumeurs cérébrales
1 500 $ décerné par la FTC du Canada.

Le prix de la Fondation des tumeurs cérébrales sera décerné au membre de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) pour son excellence dans le domaine des soins infirmiers en neurosciences liés aux tumeurs cérébrales. Créé en l’honneur de Pamela Del Maestro, IA, Bsc., membre de l’ACIIN et co-fondatrice de la Fondation canadienne des tumeurs cérébrales, le prix comprend la publication de l’article du ou de la récipiendaire dans le Journal canadien des infirmiers et infirmières en sciences neurologiques.

ADMISSIBILITÉ
1. Au moins l’un des auteurs ou l’une des auteures est membre général/honoraire de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) et en était membre général ou honoraire l’année précédente.
2. L’(les) auteur(s) ou l’(les) auteure(s) doivent stipuler par écrit leur intention d’obtenir ce prix à la date limite pour les demandes de résumés. La date limite est le 1er novembre de chaque année.
3. L’(les) auteur(s) ou l’(les) auteure(s) sont prêts(s) à présenter le travail au congrès annuel de l’ACIIN de l’année où le prix a été décerné.
4. Le travail est un ouvrage original de l’(des) auteur(s) ou de l’(des) auteure(s).
5. Le travail peut être l’adaptation d’un ouvrage précédent de l’(des) auteur(s) ou de l’(des) auteure(s); ceci doit être mentionné.
6. Le prix ne sera pas présenté au(x) même(s) auteur(s) ou à la (aux) même(s) auteure(s) deux années consécutives.
7. L’(les) auteur(s) ou l’(les) auteure(s) ne peuvent pas recevoir d’autres prix de l’ACIIN au cours de la même année.

CONTENU
1. L’article a été écrit depuis une perspective infirmière.
2. L’article traite des soins aux patients atteints d’une tumeur cérébrale.
3. L’(les) auteur(s) ou l’(les) auteure(s) présentent un développement logique d’idées s’appuyant sur des preuves scientifiques.
4. L’(les) auteur(s) ou l’(les) auteure(s) font preuve de créativité et d’originalité.
5. Le travail présente des implications pour des soins infirmiers en neurosciences, notamment au niveau de la pratique, la formation, l’administration ou la recherche.
6. L’article reflète les tendances actuelles en soins infirmiers en neurosciences.
7. Fait preuve d’une grande connaissance du sujet.

STYLE
1. Le travail est écrit selon les directives de rédaction de manuscrit aux fins de publication conformément aux directives du Journal canadien des infirmiers et infirmières en sciences neurologiques (JCIIN).

Prix de la Fondation des tumeurs cérébrales
1 500 $ décerné par la FTC du Canada.

Le prix de la Fondation des tumeurs cérébrales sera décerné au membre de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) pour son excellence dans le domaine des soins infirmiers en neurosciences liés aux tumeurs cérébrales. Créé en l’honneur de Pamela Del Maestro, IA, Bsc., membre de l’ACIIN et co-fondatrice de la Fondation canadienne des tumeurs cérébrales, le prix comprend la publication de l’article du ou de la récipiendaire dans le Journal canadien des infirmiers et infirmières en sciences neurologiques.

ADMISSIBILITÉ
1. Au moins l’un des auteurs ou l’une des auteures est membre général/honoraire de l’Association canadienne des infirmières et infirmiers en neurosciences (ACIIN) et en était membre général ou honoraire l’année précédente.
2. L’(les) auteur(s) ou l’(les) auteure(s) doivent stipuler par écrit leur intention d’obtenir ce prix à la date limite pour les demandes de résumés. La date limite est le 1er novembre de chaque année.
3. L’(les) auteur(s) ou l’(les) auteure(s) sont prêts(s) à présenter le travail au congrès annuel de l’ACIIN de l’année où le prix a été décerné.
4. Le travail est un ouvrage original de l’(des) auteur(s) ou de l’(des) auteure(s).
5. Le travail peut être l’adaptation d’un ouvrage précédent de l’(des) auteur(s) ou de l’(des) auteure(s); ceci doit être mentionné.
6. Le prix ne sera pas présenté au(x) même(s) auteur(s) ou à la (aux) même(s) auteure(s) deux années consécutives.
7. L’(les) auteur(s) ou l’(les) auteure(s) ne peuvent pas recevoir d’autres prix de l’ACIIN au cours de la même année.

CONTENU
1. L’article a été écrit depuis une perspective infirmière.
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Prix de la Fondation des tumeurs cérébrales
1 500 $ décerné par la FTC du Canada.
**Prix Jessie Young**

- **Bourse**
- **Certification**
- **Résumé**

La **bourse/certification Jessie Young** a été créée afin d’encourager la formation professionnelle continue dans le respect de la mission et de la vision de l’ACIIN. Ces bourses procurent une aide financière à des infirmiers et des infirmières diplômés afin qu’ils ou elles poursuivent leur formation dans les sciences infirmières en neurosciences.

**EXIGENCES RELATIVES À LA DEMANDE :**

**Directives :**

1. Ces bourses sont disponibles pour les infirmiers et infirmières diplômés qui ont travaillé dans le domaine des neurosciences et qui sont des membres en règle de l’ACIIN depuis au moins deux ans.
2. Le programme de formation ou le cours pour la bourse Jessie Young doit être clairement orienté vers les neurosciences ou en avoir une composante.
3. Les candidats et candidates sélectionnés doivent accepter de rédiger une lettre qui paraîtra dans le JCIIN et qui décritra en quoi le cours participera à la progression des soins infirmiers en neurosciences.

**Demande :**

Une demande complète se compose de :

1. Un formulaire de demande rempli
2. La preuve que le demandeur ou la demandeuse a été accepté dans le programme de formation ou le cours pour lequel il ou elle a fait demande, ou la preuve de l’inscription à l’examen de certification.
4. Preuve de leur enregistrement actuel au sein d’une association provinciale d’infirmières et d’infirmiers.
5. Une lettre de référence d’une personne ayant eu l’occasion d’évaluer votre travail. Sont considérées des références valables :
   - Un ou une autre membre de l’ACIIN.
   - Un administrateur ou une administratrice.
   - Un formateur ou une formatrice (institution ou hôpital).

**Dates limites pour la demande :**

1. La date limite pour recevoir les demandes de bourses Jessie Young est fixée au 1er avril de chaque année.
2. La date limite pour recevoir les demandes de certifications est fixée au 31 mai de chaque année.

**Bourse Jessie Young (Formation continue)**

**CRITÈRES POUR LA BOURSE JESSIE YOUNG—Formation continue**

**But et croyances**

L’ACIIN croit qu’un programme de maitrise en sciences infirmières, ou l’équivalent, avec une spécialisation dans la pratique clinique, la formation, la consultation, la gestion ou le leadership des soins infirmiers en neurosciences aide à promouvoir l’excellence dans la pratique des soins infirmiers en neurosciences. L’un des buts principaux de l’organisme est d’encourager la formation professionnelle continue de nos membres. La bourse Jessie Young vise à aider l’un ou l’une des membres de l’ACIIN à étudier dans un programme post-diplôme en soins infirmiers en neurosciences canadien afin qu’ils ou elles poursuivent leur croissance professionnelle et contribuent à rendre possible la réalisation de l’excellence dans les soins infirmiers en neurosciences.

**Critères pour le programme**

1. Le programme doit être offert dans une université ou un collège canadien et reconnu. Le participant ou la partici - pante doit :
   - Être un infirmier autorisé ou une infirmière autorisée, admissible à l’inscription dans la province où le programme est offert.
   - Avoir au minimum un an d’expérience dans le domaine des soins infirmiers en neurosciences.
   - Fournir la preuve de son inscription dans le programme reconnu.
   - Préciser clairement le domaine spécifique étudié dans le cadre des sciences infirmières en neurosciences si il ou elle est dans un programme de formation continue (c.-à-d. Baccalauréat en sciences infirmières) Rester un membre de l’ACIIN pendant au moins une année après la fin des études.

**DIPLÔME DE MAITRISE EN SCIENCES INFIRMIÈRES OU ÉQUIVALENT**

**CRITÈRES POUR LA BOURSE JESSIE YOUNG**

**But et croyances**

L’ACIIN croit qu’un diplôme de maitrise en sciences infirmières, ou l’équivalent, avec une spécialisation dans la pratique clinique, la formation, la consultation, la gestion ou le leadership des soins infirmiers en neurosciences aide à promouvoir l’excellence dans la pratique des soins infirmiers en neurosciences. L’un des buts principaux de l’organisme est d’encourager la formation professionnelle continue de ses membres.

**Critères pour le programme**

Le programme doit être un programme de maitrise en sciences infirmières (ou équivalent) reconnu ou un programme de doctrorat en sciences infirmières

Le participant ou la participante doit :

- Fournir la preuve de son inscription dans le programme reconnu.
- Préciser clairement le domaine spécifique étudié dans le cadre des sciences infirmières en neurosciences.
- Rester un membre de l’ACIIN pendant au moins une année après la fin des études.

**Prix du meilleur résumé Jessie Young**

Le **prix du meilleur résumé Jessie young** a été créé par l’Association canadienne des infirmières et infirmiers en neurosciences afin d’encourager la formation professionnelle continue dans le respect de la mission et de la vision de l’ACIIN, et pour aider les membres à venir assister au congrès annuel et aux sessions scientifiques. Ce prix accorde un financement pour l’inscription à une conférence et est accordé à l’un des résumés approuvés pour le congrès annuel et les sessions scientifiques.
Bourse de recherche Marlene Reimer

La bourse de recherche Marlene Reimer a été créée afin d’encourager les recherches dans le domaine des sciences infirmières en neurosciences et dans le respect de la mission et de la vision de l’ACIIN. Cette bourse accorde un financement aux infirmiers et infirmières afin qu’ils ou elles poursuivent un projet de recherche portant directement sur les questions liées aux soins des patients en neurosciences relatives aux pratiques infirmières canadiennes. Le montant accordé est déterminé chaque année. La bourse peut être accordée à un ou plusieurs individus en fonction des fonds disponibles.

1. Les fonds de recherché seront alloués annuellement et fondés sur le nombre de demandes.
2. La date limite pour les demandes est fixée au 1er novembre de chaque année.
3. L’intégralité de la bourse de recherche Marlene Reimer est de 2 000 $, à laquelle s’ajoute le profit net du « Courir pour la recherche » (Run for Research) de l’année précédente; à examiner chaque année à l’exercice de milieu de bilan par le conseil d’administration.
4. Les projets finançables portent directement sur des questions liées aux soins des patients en neurosciences.
5. Les projets porteront sur des questions relatives aux pratiques infirmières canadiennes.
7. Une lettre de demande et la proposition de recherche devront être envoyées au président ou à la présidente du comité de recherche (elles peuvent être envoyées électroniquement).
8. Deux copies supplémentaires de la proposition de recherche doivent être envoyées par courrier électronique au président ou à la présidente du comité de recherche; l’une doit contenir des données d’identification (membres de l’équipe de recherche, milieu de soins) et la seconde ne les contient pas.
9. La demande devrait être accompagnée d’une lettre de soutien écrite par la direction/le superviseur ou la superviseuse clinique et décrire la contribution de la proposition de recherche pour les sciences infirmières en neurosciences.
10. La de recherche doit contenir les informations suivantes :
   - Titre du projet.
   - Noms et qualifications du (des) chercheur(s) principal(-aux) ou de la (des) chercheuse(s) principale(s) et des chercheurs et chercheuses adjoints.
   - Objectif du projet.
   - Méthodologie (notamment un échantillon, les procédures et un plan d’analyse des données).
   - Preuve de l’accord du comité d’éthique de l’institution/l’agence d’où proviendront les sujets d’étude, le cas échéant.
   - Budget et délais.
   - Somme d’argent demandée à l’ACIIN.
11. Le budget proposé devrait contenir les sections suivantes :
   - Services professionnels.
   - Matériel.
   - Services.
   - Voyage (n’inclut pas le financement pour voyager au congrès annuel de l’ACIIN afin d’y présenter les résultats).
   - Équipement.
12. La proposition de recherche devrait également contenir des détails sur d’autres sources de financement, notamment celles qui ont été acceptées et celles en cours de traitement.
13. Le comité de recherche examinera les propositions de recherche et aviserà le conseil d’administration des décisions concernant les bourses de financement :
   - La bourse sera accordée au ou à la récipiendaire le moment où la décision aura été prise. Une reconnaissance officielle sera faite au cours du déjeuner du congrès annuel.
   - Les personnes qui recevront un financement devront fournir des rapports au comité de recherche sur demande.
   - La date limite pour les demandes de bourses de recherche est fixée au 1er novembre et sera publiée dans le JCIIN.
   - Les chercheurs et les chercheuses devront publier leurs résultats dans le JCIIN et les présenter au congrès annuel.
   - Les chercheurs et les chercheuses doivent soumettre un rapport de leurs recherches au comité de recherche.

Prix des auteurs du JCIIN

1. Tous les auteurs et auteures des articles parus dans le JCIIN qui n’ont pas reçu d’autre récompense (telle que le prix Codman, le prix Medtronic, le prix des tumeurs cérébrales de l’ACIIN) peuvent recevoir le prix des nouveaux auteurs ou le prix général des auteurs.
2. Un nouvel auteur ou une nouvelle auteure est un auteur ou une auteure qui publie dans le JCIIN pour la première fois;
3. Les noms des auteurs et auteures admissibles seront tirés au sort durant le congrès de juin.
4. Les gagnants de chacun des deux prix recevront un chèque de 200 $ durant l’assemblée générale annuelle de juin.
5. Les auteurs et auteures gagnants ne doivent pas nécessairement être membres de l’ACIIN.
7. Le prix proviendra du budget du JCIIN.
8. S’il n’y a pas de nouveaux auteurs ou nouvelles auteures durant une quelconque année, un second prix général des auteurs sera tiré au sort parmi les auteurs admissibles de cette année.
9. Le prix sera remis par le rédacteur ou la rédactrice du JCIIN, ou la personne désignée.
10. The Canadian Journal of Neuroscience Nursing (CJNN) is a peer-reviewed journal.


12. Papers must be word processed and submitted in Word format. A hard copy and disk may be sent by mail or the paper may be submitted by e-mail attachment to Theresa Green, RN, PhD, Assistant Professor, University of Calgary, Faculty of Nursing, Room 2210, Professional Faculties Building, University of Calgary, 2500 University Dr. NW Calgary, AB T2N 1N4, Canada or cjnn@cann.ca.

13. Two peer reviewers review all papers received for content. The Editor appraises the paper for formatting, style, grammatical accuracy, and appropriateness for publication. This process usually takes five to eight weeks. Papers may be: a) accepted as submitted, b) returned for revisions, or c) rejected and returned with feedback.

14. Manuscript guidelines
   - Maximum length is 6,000 words or 20 pages
   - Margins 1", double spaced, Times New Roman, 12-point font size
   - Title page with full title, name, and institutional affiliation
   - Abstract of fewer than 200 words
   - Left justified, paragraphs indented 5 spaces
   - Headings typically include: Introduction; Review of the literature (conceptual and data based); Research question/Objectives/Hypotheses/Clinical concern; Methodology and method; Analysis/Findings; Discussion including specific Clinical implications/recommendations; Summary/Conclusions; and References. (Please note, not all of these headings are needed or may apply to all papers).
   - Abbreviations should always be preceded by the full term. An example would be Traumatic Brain Injury (TBI).
   - Drug citations include the generic name in lowercase letters and brand names in parentheses.